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**An Analysis of Contract Management Processes at the Space  
and Missile Systems Center and the Air Force Life Cycle  
Management Center (Wright–Patterson) Using the Contract  
Management Maturity Model**

**28 November 2012**

**by**

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Capt. Geoffrey A. Levine, USAF, and  
Capt. Keith V. Philaphandeth, USAF**

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**Graduate School of Business & Public Policy**

**Naval Postgraduate School**

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Prepared for: Naval Postgraduate School, Monterey, California 93943



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## **ABSTRACT**

The contract management maturity model (CMMM) is a proven tool for contract management process analysis across all phases of the acquisition process. This includes procurement planning, solicitation planning, solicitation, source selection, contract administration, and contract closeout. We use the Contract Management Maturity Assessment Tool (CMMAT) to apply the CMMM to the Space and Missile Systems Center (SMC) and the Air Force Life Cycle Management Center–Wright–Patterson (AFLCMC–WP) Contract Management processes. The SMC is headquartered at Los Angeles Air Force Base, California, and the AFLCMC–WP is at Wright–Patterson Air Force Base, Ohio.

The primary purpose of this research is to analyze the SMC and the AFLCMC–WP contracting processes, to identify key process area strengths and weaknesses, to discuss examples of contract management process tools, and to make recommendations for improvements, if necessary. The results will provide the SMC and the AFLCMC–WP with a snapshot of the maturity level of their contracting processes, allowing them to identify the unique challenges that they are facing, and providing an assessment tool to effectively engage and overcome these challenges and potentially improve the organizations' contracting process.



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## TABLE OF CONTENTS

<b>I.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
A.	CHAPTER INTRODUCTION.....	1
B.	BACKGROUND.....	1
C.	PURPOSE.....	5
D.	RESEARCH QUESTION.....	6
E.	ORGANIZATION.....	6
F.	METHODOLOGY.....	7
G.	BENEFITS OF THE RESEARCH.....	7
H.	LIMITATIONS OF THE RESEARCH.....	8
I.	SUMMARY.....	8
<b>II.</b>	<b>LITERATURE REVIEW.....</b>	<b>9</b>
A.	CHAPTER INTRODUCTION.....	9
B.	PERFORMANCE MEASUREMENT.....	9
1.	Purchasing Measurement.....	9
2.	Purchasing Performance.....	10
3.	Purchasing Cost Savings.....	12
C.	PROCESS MEASUREMENT USING MATURITY MODELS.....	13
1.	Capability Maturity Model.....	13
2.	Project Management Maturity Model.....	14
3.	Knowledge Management Maturity Model.....	15
D.	CONTRACT MANAGEMENT MATURITY MODEL.....	16
E.	KEY PROCESS AREAS.....	17
1.	Procurement Planning.....	17
2.	Solicitation Planning.....	18
3.	Solicitation.....	18
4.	Source Selection.....	18
5.	Contract Administration.....	19
6.	Contract Closeout.....	19
F.	MATURITY LEVELS.....	20
1.	Ad Hoc.....	20
2.	Basic.....	20
3.	Structured.....	21
4.	Integrated.....	21
5.	Optimized.....	21
G.	PROCESS ENABLERS.....	22
H.	CURRENT APPLICATIONS OF THE CMMM.....	23
I.	THIS ASSESSMENT.....	25
J.	SUMMARY.....	26
<b>III.</b>	<b>THE SPACE AND MISSILE SYSTEMS CENTER AND THE AIR FORCE LIFE CYCLE MANAGEMENT CENTER (WRIGHT-PATTERSON).....</b>	<b>27</b>
A.	CHAPTER INTRODUCTION.....	27
B.	THE SMC ORGANIZATION.....	27



C.	THE SMC DIRECTORATE OF CONTRACTING ORGANIZATION .....	29
D.	THE AFLCMC-WP ORGANIZATION.....	29
E.	THE AFLCMC DIRECTORATE OF CONTRACTING ORGANIZATION .....	31
F.	CONTRACT MANAGEMENT PROCESS TOOLS .....	31
	1. Process Tools at the SMC.....	32
	2. Process Tools at the AFLCMC-WP.....	36
G.	SUMMARY .....	38
IV.	ASSESSMENT RESULTS AND PROCESS IMPROVEMENT RECOMMENDATIONS.....	39
A.	CHAPTER INTRODUCTION.....	39
B.	SELECTION OF STUDY PARTICIPANTS .....	39
C.	ADMINISTRATION OF THE CMMAT ASSESSMENT.....	40
D.	RESULTS OF THE CMMAT AT THE SMC .....	41
	1. Contract Management Maturity of SMC Organizations.....	41
	2. Contract Management Maturity of the Entire SMC.....	45
E.	RESULTS OF THE CMMAT AT THE AFLCMC-WP .....	46
	1. Contract Management Maturity of AFLCMC-WP Organizations .....	46
	2. Contract Management Maturity of the Entire AFLCMC-WP.....	50
F.	PROCESS ENABLERS AT THE SMC.....	51
	1. SMC Process Strength.....	52
	2. Successful Results.....	52
	3. Management Support .....	53
	4. Process Integration .....	54
	5. Process Measurement .....	55
G.	KEY ENABLERS AT THE AFLCMC-WP .....	56
	1. Process Strength.....	56
	2. Successful Results.....	57
	3. Management Support .....	58
	4. Process Integration .....	59
	5. Process Measurement .....	60
H.	RECOMMENDATIONS FOR CONTRACT MANAGEMENT PROCESS IMPROVEMENT AT THE SMC.....	61
	1. Procurement Planning.....	61
	2. Solicitation Planning.....	62
	3. Solicitation .....	63
	4. Source Selection .....	64
	5. Contract Administration .....	64
	6. Contract Closeout .....	65
I.	RECOMMENDATIONS FOR CONTRACT MANAGEMENT PROCESS IMPROVEMENT AT THE AFLCMC .....	66
	1. Procurement Planning.....	66
	2. Solicitation Planning.....	67



3.	Solicitation .....	68
4.	Source Selection .....	69
5.	Contract Administration .....	70
6.	Contract Closeout .....	71
J.	SUMMARY .....	72
V.	SUMMARY, CONCLUSION, AND AREAS FOR FURTHER RESEARCH.....	73
A.	CHAPTER INTRODUCTION .....	73
B.	SUMMARY .....	73
C.	CONCLUSION .....	74
1.	At what level of maturity are the contracting processes in each contracting department at the SMC and the AFLCMC? .....	74
2.	What contract management process tools are utilized at the SMC and the AFLCMC–WP? .....	75
3.	How can contracting process management at the SMC and the AFLCMC–WP be improved, if needed?.....	76
D.	AREAS FOR FURTHER RESEARCH.....	76
	LIST OF REFERENCES .....	77



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## LIST OF FIGURES

Figure 1.	SMC/PK Buyer's Homepage (SMC/PK, August 2012) .....	33
Figure 2.	Processes by Elimination (SMC/PK, August 2012) .....	34
Figure 3.	Pricing Corner (SMC/PK, August 2012) .....	35
Figure 4.	PK Metrics Dashboard (SMC/PK, August 2012) .....	36
Figure 5.	Contracting Flow Charts (AFLCMC, August 2012) .....	37
Figure 6.	Contract Management Maturity Model Summary for SMC Organizations .....	45
Figure 7.	Contract Management Maturity Model Summary for AFLCMC Organizations .....	50
Figure 8.	Process Strength .....	52
Figure 9.	Successful Results .....	53
Figure 10.	SMC Management Support .....	54
Figure 11.	SMC Process Integration.....	55
Figure 12.	SMC Process Integration.....	56
Figure 13.	AFLCMC Process Strength .....	57
Figure 14.	AFLCMC Successful Results .....	58
Figure 15.	AFLCMC Management Support .....	59
Figure 16.	AFLCMC Management Support .....	60
Figure 17.	AFLCMC Management Support .....	61



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## LIST OF TABLES

Table 1.	Changes in Air Force Space Budget .....	3
Table 2.	Changes in Air Force Aircraft Budget .....	4
Table 3.	Conversion Table .....	40
Table 4.	SMC Survey Response Rate.....	42
Table 5.	SMC Organization Code.....	43
Table 6.	SMC Survey Item Responses for Procurement Planning, Solicitation Planning, and Solicitation .....	43
Table 7.	SMC Survey Item Responses for Source Selection, Contract Administration, and Contract Closeout .....	44
Table 8.	SMC Contract Management Maturity Levels .....	46
Table 9.	AFLCMC Survey Response Rate .....	47
Table 10.	AFLCMC Organization Code.....	47
Table 11.	AFLCMC Survey Item Responses for Procurement Planning, Solicitation Planning, and Solicitation .....	48
Table 12.	AFLCMC Survey Item Responses for Source Selection, Contract Administration, and Contract Closeout .....	49
Table 13.	AFLCMC Contract Management Maturity Levels .....	51



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## LIST OF ACRONYMS AND ABBREVIATIONS

AAC	U.S. Air Force Air Armament Center
AFB	Air Force Base
AFFARS	Air Force Federal Acquisition Regulation Supplement
AFLCMC	U.S. Air Force Life Cycle Management Center
AFLCMC/CC	AFLCMC Commander
AFLCMC-WP	AFLCMC Wright-Patterson Air Force Base
AFMC	U.S. Air Force Materiel Command
AFPEO/SP	Air Force Program Executive Officer for Space
AFSPC	U.S. Air Force Space Command
AMCOM	U.S. Army Contracting Command, Aviation and Missile Command
ARP	Acquisition Research Program
ASC	U.S. Air Force Aeronautical Systems Center
C3I	Command Control Communications Intelligence
CMM	Capability Maturity Model
CMMAT	Contract Management Maturity Assessment Tool
CMmm	Contract Management Maturity Model
DAWIA	Defense Acquisition Workforce Improvement Act
DFARS	Defense Federal Acquisition Regulation Supplement
DoD	Department of Defense
ESC	U.S. Air Force Electronic Systems Center
FAR	Federal Acquisition Regulation
FY	Fiscal Year
GAO	Government Accountability Office
ISR	Intelligence Surveillance Reconnaissance
KMMM	Knowledge Management Maturity Model
MILDEPS	Military Departments
MILSATCOM	Military Satellite Communications
NAVAIR	U.S. Naval Air Systems Command
NAVFAC	U.S. Naval Facilities Engineering Command
NAVSEA	U.S. Naval Sea Systems Command
NCR	U.S. Army Contracting Command, National Capital Region
NMS	The National Military Strategy for the United States of America
NPS	Naval Postgraduate School
NSS	National Security Strategy
ORS	Operationally Responsive Space
PEO	Program Executive Officer
PKE	Enterprise Acquisition Contracting Division
PKI	Infrared Space Systems Contracting Division



PKJ	Military Satellite Communications Contracting Division
PKK	Launch & Range Systems Contracting Division
PKL	Space Logistics Contracting Division
PKN	Satellite Control & Network Contracting Division
PKO	Operational Contracting Division
PKP	Global Positioning Systems Contracting Division
PKS	Space Superiority Systems Contracting Division
PKT	Space Development & Test Contracting Division
PKW	Defense Weather Systems Contracting Division
PMMM	Project Management Maturity Model
PZC	Contracting Policy and Committee Division
QDR	Quadrennial Defense Review
RDECOM	U.S. Army Contracting Command, Research, Developments, and Engineering Command
SAE	Service Acquisition Executive
SAF/AQ	Assistant Secretary of the Air Force for Acquisitions
SCCO	Senior Center Contracting Official
SES	Senior Executive Service
SMC	U.S. Air Force Space and Missile Systems Center
SMC/CC	SMC Commander
SMC/PK	SMC Directorate of Contracting or SMC Director of Contracting
SPAWAR	U.S. Space and Naval Warfare Systems Command
TACOM	U.S. Army Contracting Command, Tank-Automotive and Armaments Command
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
WIK	ISR Contracting Division
WKK	KC-46 Tanker Modernization Contracting Division
WLK	Mobility Contracting Division
WNK	Agile Combat Support Contracting Division
WWK	Fighters and Bombers Contracting Division



# **I. INTRODUCTION**

## **A. CHAPTER INTRODUCTION**

In the first chapter of this MBA project, we establish the framework for the research presented in later chapters. We provide a background to illustrate a period of expected budget cutbacks and austerity in the Department of Defense (DoD), in general, and in military space and aircraft weapon systems, specifically. We also discuss the purpose of this research to show how mature contracting processes can help in this time of “belt-tightening.” Additionally, we articulate the research question to drive the remainder of this report. We also include the scope, methodology, benefits, and limitations of the research before the chapter summary.

## **B. BACKGROUND**

In *The National Military Strategy for the United States of America* (NMS), former Chairman of the Joint Chiefs of Staff, Admiral Michael Mullen (2011), echoed sentiment from the 2010 *National Security Strategy* (NSS) and *Quadrennial Defense Review* (QDR) when he listed a growing U.S. economy as a primary enduring interest, and our increased national debt as a significant national security risk. Reducing the national debt is part of defending the interests of the United States because it ensures economic superiority. Defense spending is the largest discretionary portion of the federal budget, surpassing all other non-security domestic discretionary spending combined. As a result, the DoD and the military departments (MILDEPS) will likely face significant budget constraints and restructuring.

At the time of this report, the DoD expects to shave \$487 billion over the next 10 years, according to a congressional mandate. In a 2012 article titled “Panetta, Joint Chiefs Chairman Defend Military Budget Cuts,” the Associated Press reported on testimony to the Senate Armed Services Committee. As stated by the article,

Defense officials have laid out plans to find about \$20 billion in savings over the next five years, including moves to slash the size of the Army and Marine Corps, cut back on shipbuilding and delay the purchase of some fighter jets and other weapon systems. (“Panetta,” 2012)



Many programs with slashed budgets will come from military space weapon systems. Cheryl Pellerin (2012) reported on Air Force Space Command Commander General William L. Shelton's testimony to the House Armed Services Committee on March 9, 2012. According to Pellerin (2012), General Shelton reported that space programs will experience a 22% drop in the fiscal year (FY) 2013 request from the 2012 request. Operationally Responsive Space (ORS) and Space Test are two programs that are being virtually shut down. In Table 1, we show selected information on military space systems from the 2013 president's budget.



**Table 1. Changes in Air Force Space Budget**

Sample of Changes in Air Force Space Budget (Millions of Dollars)				
Funding Type	Program	FY12	FY13	Change
3080	NUDET Detection System Space	\$4.863	\$5.564	\$0.701
3080	Satellite Control Network	\$60.592	\$44.219	-\$16.373
3080	Spacelift Range System	\$124.967	\$109.545	-\$15.422
3080	MILSATCOM	\$36.481	\$47.592	\$11.111
3080	Space Mods	\$28.052	\$47.121	\$19.069
3080	Counter Space System	\$20.642	\$20.961	\$0.319
3080	Space-Based Infrared System (SBIRS) High	\$49.570	\$47.135	-\$2.435
3600	NUDET Detection System Space	\$81.989	\$64.965	-\$17.024
3600	NAVSTAR GPS	\$17.704	\$14.335	-\$3.369
3600	Satellite Control Network	\$18.143	\$33.773	\$15.630
3600	Global Positioning System III	\$362.823	\$371.595	\$8.772
3600	Evolved Expendable Launch Vehicle	\$14.524	\$7.980	-\$6.544
3600	GPS III Space Segment	\$455.095	\$318.992	-\$136.103
3600	Spacelift Range System	\$9.877	\$87.600	\$77.723
3600	NAVSTAR Global Positioning System User Equipment	\$131.832	\$29.621	-\$102.211
3600	MILSATCOM Terminals	\$236.581	\$107.237	-\$129.344
3600	Space Superiority Intelligence	\$12.056	\$12.056	\$0.000
3600	Space Situational Awareness Systems	\$238.261	\$267.252	\$28.991
3600	Space Test Systems	\$47.409	\$10.051	-\$37.358
3600	Operationally Responsive Space	\$110.379	\$0.000	-\$110.379
3600	Space-Based Infrared System (SBIRS) High	\$621.629	\$448.594	-\$173.035
3600	National Polar-Orbiting Op Env Satellite	\$43.000	\$0.000	-\$43.000
3600	Weather Satellite Follow-On	\$123.681	\$2.000	-\$121.681
3600	Space Control Technology	\$44.635	\$25.144	-\$19.491
3600	Advanced EHF MILSATCOM	\$397.446	\$229.171	-\$168.275
3600	Space Technology	\$115.158	\$98.375	-\$16.783
3600	Wideband MILSATCOM	\$12.692	\$12.027	-\$0.665
3600	Polar MILSATCOM	\$101.348	\$120.676	\$19.328
3600	Advance Spacecraft Technology	\$74.009	\$64.557	-\$9.452
<b>TOTAL</b>				<b>-\$947.300</b>

Consolidated from *Department of defense fiscal year (FY) 2013 president's budget submission: Air force*

Aircraft are also at risk of extreme budget cuts. According to a September 2012 Reuters article (“U.S. budget,” 2012), there will be cuts of “\$2.01 billion from the Air Force aircraft procurement account, a large chunk of which was to be used for F-35 purchases.” In Table 2, we show selected information on aircraft in the 2013 president’s budget.



**Table 2. Changes in Air Force Aircraft Budget**

Sample of Changes in Air Force Aircraft Budget (Millions of Dollars)				
Funding Type	Program	FY12	FY13	Change
3010	F-35	\$3,289.615	\$3,124.302	-\$165.313
3010	F-22A	\$3,622.712	\$3,417.702	-\$205.010
3010	C-17A	\$225.000	\$0.000	-\$225.000
3010	C-130J	\$136.379	\$68.373	-\$68.006
3010	HC-130J	\$332.899	\$152.212	-\$180.687
3010	MC-130J	\$582.466	\$374.866	-\$207.600
3010	C-27J	\$1,856.640	\$595.451	-\$1,261.189
3010	CV-22	\$339.865	\$294.220	-\$45.645
3010	RQ-4	\$323.964	\$75.000	-\$248.964
3010	AC-130J	\$108.470	\$163.970	\$55.500
3010	MQ-9	\$719.592	\$553.590	-\$166.002
3010	B-2A	\$31.015	\$82.296	\$51.281
3010	B-1B	\$198.007	\$149.756	-\$48.251
3010	B-52	\$93.897	\$9.781	-\$84.116
3010	A-10	\$55.028	\$89.919	\$34.891
3010	F-15	\$255.586	\$148.378	-\$107.208
3010	F-16	\$56.746	\$6.896	-\$49.850
3010	C-5	\$71.040	\$6.967	-\$64.073
3010	C-17A	\$202.179	\$205.079	\$2.900
3010	C-21	\$0.328	\$0.199	-\$0.129
3010	C-32A	\$1.757	\$1.750	-\$0.007
3010	C-37A	\$0.486	\$0.445	-\$0.041
3010	T-6	\$15.086	\$15.494	\$0.408
3010	T-1	\$0.238	\$0.272	\$0.034
3010	T-38	\$31.032	\$20.455	-\$10.577
3010	KC-10A	\$9.820	\$46.921	\$37.101
3010	C-12	\$1.777	\$1.876	\$0.099
3010	MC-12W	\$34.067	\$17.054	-\$17.013
3010	C-135	\$62.210	\$46.707	-\$15.503
3010	RC-135	\$162.211	\$173.237	\$11.026
3010	E-3	\$135.031	\$193.099	\$58.068
3010	E-4	\$57.829	\$47.616	-\$10.213
3010	E-8	\$22.558	\$59.320	\$36.762
3010	H-1	\$5.280	\$5.449	\$0.169
3010	H-60	\$58.971	\$26.227	-\$32.744
TOTAL				-\$2,924.902
Consolidated from <i>Department of defense fiscal year (FY) 2013 president's budget submission: Air force</i>				

The small transport C-27J aircraft is going to be virtually canceled only one year after entering combat for the first time. In a *Stars and Stripes* article from April 2012, author Heath Druzin states, “The Air Force now says the plane is a luxury it cannot



afford in this era of cost-cutting, despite the fact that the government signed a \$2 billion contract to produce the planes.”

### **C. PURPOSE**

In the opening line of the *DOD Guide to Integrated Product and Process Development*, the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD[AT&L], 1996) stated, “The ultimate goal of DoD acquisition is to provide the warfighters with world-class equipment and systems at an affordable cost and on a schedule that is responsive to the need.” Given the harsh realities of the DoD’s budget, strong contract management processes will be exponentially important to preserve the scarce resources provided by the American people. Contracting management must be considered a core competency of federal organizations (Kelman, 2001).

However, the Government Accountability Office (GAO) identified both weapon systems acquisitions and contract management as high-risk areas, stating that major defense acquisition programs continue to take longer, cost more, and deliver fewer quantities and capabilities to the warfighter than planned (GAO, 2009). In a 2006 report on fraud, waste, and abuse in DoD contracting, the GAO made numerous recommendations dealing with the underlying processes of contract development and management (GAO, 2006).

The purpose of this study is to analyze the United States Air Force Space and Missile Systems Center (SMC) at Los Angeles Air Force Base, Los Angeles, CA. Additionally, we study the legacy organizations from the Aeronautical Systems Center (ASC) at Wright–Patterson Air Force Base, Dayton, OH, which is now part of the Air Force Life Cycle Management Center (AFLCMC). We study these organizations for contract management process maturity utilizing the contract management maturity model (CMMM) to find strengths, weaknesses, and best practices in contract management at the SMC and the AFLCMC.



#### **D. RESEARCH QUESTION**

Our research at the SMC and the AFLCMC Wright–Patterson Air Force Base (AFLCMC–WP) evaluates contracting management process maturity across each of the departments with buying activities. The primary research question in this study is as follows:

- At what level of maturity are the contracting processes in each contracting department at the SMC and the AFLCMC–WP?

In this study, we analyze process maturity to answer the following two secondary research questions:

- What contract management process tools are utilized at the SMC and the AFLCMC–WP?
- How can contracting process management at the SMC and the AFLCMC–WP be improved if needed?

#### **E. ORGANIZATION**

This report is organized into five chapters. In Chapter I, Introduction, we provide a background and purpose for having done this research. We also articulate the research questions and describe the research methodology, benefits, and limitations. Chapter II is a literature review. Through the literature review, we provide the history and concepts behind the CMMM and the accompanying Contract Management Maturity Assessment Tool (CMMAT). We discuss the six phases of contracting processes and the five levels of maturity. We also summarize the results and findings of previous research using the CMMM. In Chapter III, we go into depth about the SMC, and SMC/PK in particular. We also go into depth about the AFLCMC–WP. This chapter includes reasons that the SMC and the AFLCMC–WP were chosen for this survey. In Chapter IV, we show the results and analysis of the CMMAT and our identification of best practices, as well as make recommendations for process improvement. In Chapter V, we summarize all of the research, giving final conclusions and recommendations for further research.



## **F. METHODOLOGY**

The CMMM and CMMAT were developed in 2003 by Rene Rendon (Rendon, 2003). The CMMAT is a web-based survey that includes approximately 60 questions related to contract management processes and is organized into the following six phases of contracting: (1) procurement planning, (2) solicitation planning, (3) solicitation, (4) source selection, (5) contract administration, and (6) contract closeout (Garrett & Rendon, 2005a).

The CMMAT was sent to all of the SMC and the AFLCMC–WP personnel who are part of buying activities and have achieved a Defense Acquisition Workforce Improvement Act (DAWIA) Level II in contracting. We applied the results of the CMMAT to the CMMM to evaluate contract maturity. The CMMM rates these organizations across each contracting phase and places them at one of five levels: (1) ad hoc, (2) basic, (3) structured, (4) integrated, and (5) optimized (Garrett & Rendon, 2005a).

We also used an open-ended question in the CMMAT, asking individuals to list five critical success factors for the SMC and the AFLCMC–WP to perform its mission. Taking into account all of the above data, we consulted with division chiefs and support personnel in the SMC and the AFLCMC–WP for comments on contract process management and demonstration of various contract management process tools.

## **G. BENEFITS OF THE RESEARCH**

The CMMM will provide the SMC and the AFLCMC directors of contracting with a strategic overlook of contract management process maturity for their entire contracting directorate. Having a vision of the entire organization will assist SMC and AFLCMC contracting leadership in making significant strategic management decisions. CMMM information will help in decisions involving resources, personnel, processes, and many other leadership challenges.

Additionally, our analysis and recommendations can help the SMC and AFLCMC identify best practices in their organizations and implement them universally. Contract management process improvement will only help weapon system programs to stay on



positive cost and schedule trajectories, which are of the utmost importance, given the steady budget decline.

Finally, the results of the CMMM on the SMC and the AFLCMC–WP can be added to a body of research on contract management throughout the DoD. The SMC and the AFLCMC–WP make excellent case studies that, when combined with previously completed research, will aid DoD-level acquisition leadership.

## **H. LIMITATIONS OF THE RESEARCH**

Although the CMMM and subsequent analysis can identify contract management process maturity levels and best practices, they cannot implement these best practices. The CMMM does not provide an outline or recommendation for education or training. The quality of the CMMM is a reflection of the effort of the individuals completing the CMMAT. Any “pencil whipping” or shirking on the part of the survey participants can skew the results. Additionally, a high response rate is needed to ensure an accurate representation of the processes evaluated.

## **I. SUMMARY**

In this first chapter, we provided an introduction to the rest of the report. We gave a background showing how future DoD budgets are shrinking, particularly in regards to military space and aircraft weapon systems. We also included a discussion of the importance of contract management processes as a purpose for this research. In this chapter, we explained the organization of the report and the research methodology, as well as the research benefits and limitations. The next chapter is a literature review that provides more information on the CMMM, as well as information on earlier CMMM studies.



## **II. LITERATURE REVIEW**

### **A. CHAPTER INTRODUCTION**

For successful organization management, organizational leaders should engage in performance measurement. In this chapter, we provide a literature review of ways these leaders can measure performance in their organization. One way to measure performance is through maturity models, also reviewed in this chapter. Furthermore, we review in detail the CMMM as a type of maturity model, including key process areas, maturity levels, and process enablers. Finally, we review current applications of the CMMM and our decision to use the SMC and the AFLCMC as subjects for this assessment.

### **B. PERFORMANCE MEASUREMENT**

#### **1. Purchasing Measurement**

According to Weele (2010), “One of the most important factors that influences the way in which purchasing results are measured, is how management looks upon the role and importance of the purchasing function” (p. 302). Weele (2010) highlighted four views that management may hold, with the first being that management views the purchasing function as an operational or administrative activity (p. 302). The other three views are viewing purchasing as a commercial activity, viewing it as part of integrated logistics, and, finally, viewing purchasing as a strategic business area (Weele, 2010, pp. 302–303).

Viewing purchasing as an operational or administrative activity results in management assessing it as a clerical function with menial labor. The second view, according to Weele (2010), is as a commercial function (p. 302). This view has management realizing the savings potential that purchasing represents (Weele, 2010, p. 302). In this case, management may agree upon targets for price or cost reduction within the purchasing department (Weele, 2010, p. 302). The third way in which management may view purchasing is as a part of integrated logistics (Weele, 2010, p. 303). According to Weele (2010), when management views purchasing as a part of integrated logistics, it “becomes aware that price hunting has its drawbacks and may lead to sub-optimization”



(p. 303). This means that suppliers may try to pass off lower quality or less reliable goods, which hurts the company and management in the long run (Weele, 2010, p. 303). As a result, with this view of purchasing, management introduces “cost reduction targets, targets to buyers on quality improvement, inventory reduction, improving payment terms, lead time reduction, and improving supplier delivery reliability” (Weele, 2010, p. 303). Viewing purchasing as a strategic business area is the fourth and final view described by Weele (2010). With this view, “purchasing is actively involved in deciding on the company’s future business strategy and how to strengthen the company’s competitive position” (Weele, 2010, p. 303). Consequently, management is constantly evaluating outsourcing decisions and its supplier base (Weele, 2010, p. 303). Depending on how management views purchasing, purchasing’s position and the way purchasing is measured will differ (Weele, 2010, p. 303).

## **2. Purchasing Performance**

According to Weele (2010), defining purchasing performance involves deciding what should be measured (p. 303). Weele (2010) considered two elements, purchasing effectiveness and purchasing efficiency, as the precursors to purchasing performance (p. 305). Purchasing effectiveness is defined by Weele (2010) as “the extent to which, by choosing a certain course of action, a previously established goal or standard is being met” (p. 305). In essence, it refers to the correlation between actual and planned performance (Weele, 2010, p. 305). Moreover, it is linked to “the goals and objectives of the purchasing function” (Weele, 2010, p. 307). Purchasing efficiency, on the other hand, is defined by Weele (2010) as “the relationship between planned and actual sacrifices made in order to realize a goal previously agreed upon” (p. 305). According to Weele (2010), efficiency is linked to the purchasing organization: “More specifically it relates to the way purchasing is organized, systems are being used, procedures and guidelines that are in place, and the purchasing staff” (p. 307). From purchasing effectiveness and purchasing efficiency comes purchasing performance, and Weele (2010) defined purchasing performance as “the extent to which the purchasing function is able to realize its predetermined goals at the sacrifice of a minimum of the company’s resources” (p. 305).



Weele (2010) further listed four dimensions on which purchasing performance can be measured, starting with the purchasing price/cost dimension (p. 307). The other three dimensions are product/quality, logistics, and organizational (Weele, 2010, p. 307). According to Weele (2010), the purchasing price/cost dimension “refers to the relationship between standard and actual prices paid for materials and services” (p. 307). The purchasing price/cost dimension further breaks down to two parts: price/cost control and price/cost reduction (Weele, 2010, p. 307). Price/cost control relates “to the continuous monitoring and evaluation of prices and price increases as they are charged by suppliers” (Weele, 2010, p. 307). The goal of price/cost control is to monitor prices to prevent excessive costs (Weele, 2010, p. 307). Price/cost reduction differs from price/cost control as it refers to the monitoring and evaluating of activities to reduce costs in a planned way when buying supplies or services (Weele, 2010, p. 307). The goal of price/cost reduction is to monitor the planned activities to reduce costs (Weele, 2010, p. 307).

The second dimension listed by Weele (2010) on which purchasing performance can be measured is the “purchasing product/quality dimension” (p. 307). Again, like the first dimension, the product/quality dimension can be differentiated between two ideas, the first being “purchasing’s involvement in new product development” (Weele, 2010, p. 307). Product development involves purchasing’s contribution to product innovation by measuring costs and activities of new developments (Weele, 2010, p. 308). These measurements will explain delays or cost overruns if they occur (Weele, 2010, p. 308). The second differentiation is “purchasing’s contribution to total quality control” (Weele, 2010, p. 308). Weele (2010) described purchasing’s role as an inspector, meaning that it needs to ensure that the goods ordered meet the company’s specification (p. 308). Measurements are used to ensure faultless materials arrive from the suppliers (Weele, 2010, p. 308).

Purchasing logistics is the third dimension and it entails “purchasing’s role in contributing to an efficient incoming flow of purchased materials and services” (Weele, 2010, p. 308). This dimension includes three main activities, the first being “control of the timely and accurate handling of purchasing requisitions” (Weele, 2010, p. 308). With



this activity, measures are used to track purchasing statistics, such as average lead time. The second main activity is “control of timely delivery by suppliers” and the last is “control of quantities delivered” (Weele, 2010, p. 308).

The fourth dimension on which purchasing performance can be measured is “purchasing’s organizational dimension,” and in this dimension resources are devoted to achieving the organization’s goals and objectives (Weele, 2010, p. 308). Weele (2010) lists four resources organizations use that include purchasing staff, purchasing management, purchasing procedures and guidelines, and purchasing information systems (p. 308). Purchasing staff refers to the education and development of purchasing employees in an organization (Weele, 2010, p. 308). Weele (2010) describes purchasing management as the way a purchasing department is run and its communication style (p. 308). Purchasing procedures and guidelines relates to the “availability of procedures and working instructions for purchasing staff and suppliers in order to make sure that work is done in the most efficient manner” (Weele, 2010, p. 308). Purchasing information systems refers to the efforts in improving information systems that assist purchasing employees do a better job in their organization (Weele, 2010, p. 308).

### **3. Purchasing Cost Savings**

In reference to Weele (2010), purchasing cost savings “are among the most popular when it comes to evaluating purchasing and individual buyer performance” (p. 311). Weele (2010) noted how difficult it is to define or measure cost savings; however, he made a distinction between cost avoidance and cost reduction (pp. 311–312). Weele (2010) defined cost avoidance as “a variance between the historical and the actual purchase price paid per unit” (p. 312). Weele (2010) stated that a cost avoidance is unsustainable, whereas a cost reduction is sustainable (p. 312). This difference is critical and allows an organization to start up a cost reduction plan (Weele, 2010, p. 312).

Weele (2010) offered four suggestions for a successful cost reduction plan. First, he suggested that the organization must have clear savings targets from the beginning. These targets will influence the rest of the organization’s decisions (Weele, 2010, p. 312). Second, Weele (2010) stated that “external factors that cannot be influenced by the



buyers need to be left out of the reporting” (p. 312). This is especially important as it does not allow non-attributable actions to be accounted for. Third, Weele (2010) stated that there is a distinction between theoretical and actual cost savings (p. 312). He stated that the difference between the two is called “contract leakage” and that it is a key indicator of “maverick buying” (p. 313). According to Weele (2010), “Maverick buying implies that managers in the organization do not automatically follow corporate agreements with contracted suppliers but for some reason stick to their traditional suppliers” (p. 313). Weele’s (2010) fourth and last suggestion for an organization’s cost reduction plan is that purchasing managers do not report cost savings (p. 313).

### **C. PROCESS MEASUREMENT USING MATURITY MODELS**

According to Weerdmeester, Pocaterra, and Hefke (2003), maturity models illustrate the development of an organization over time and must pass four tests. The first test is to determine whether the model is “simplified and described with a limited number of maturity levels (usually four to six)” (Weerdmeester et al., 2003, p. 5). The second test is that organizations have to meet certain requirements to enter into a level (Weerdmeester et al., 2003, p. 5). The third test is that the levels in the model are done consecutively in order, starting from the lowest level to the highest level (Weerdmeester et al., 2003, p. 5). The last test is that organizations cannot skip levels (Weerdmeester et al., 2003, p. 5).

In this MBA project, we researched three maturity models, in addition to the CMMM. The three maturity models are the capability maturity model, the project management maturity model, and the knowledge management maturity model. The CMMM is compared with these three maturity models to determine its validity.

#### **1. Capability Maturity Model**

The Software Engineering Institute and the DoD developed the capability maturity model (CMM) in 1991 as a joint venture (Wysocki, 2004, p. 19). Wysocki (2004) stated that the function of the CMM was

to provide organizations with a guide for establishing process improvement programs for software development. The guide can be used



as both a foundation for establishing tools and as input to creating a maturity questionnaire for process improvements. (p. 19)

The model defined five levels of maturity: initial, repeatable, defined, managed, and optimizing (Wysocki, 2004, p. 20).

The first level, initial, is when processes are ad hoc and few processes are defined (Wysocki, 2004, p. 20). The second level, repeatable, is when processes are established and put in place; however, use of these processes is not mandatory (Wysocki, 2004, p. 20). The third level, defined, is when processes are standardized, documented, and required (Wysocki, 2004, p. 20). The fourth level, managed, is when “project progress against plan is monitored, reported and controlled. ... Project management decisions are integrated into other business processes” (Wysocki, 2004, p. 20). The last level, optimizing, is when past performance is looped back into the process to promote best practices and improvement programs (Wysocki, 2004, p. 20).

The CMM passes the four tests by Weerdmeester et al. (2003); first, it is simple and has five levels. Moreover, the CMM has set requirements for organizations to meet to enter into levels. It also passes the third and fourth tests, because organizations have to go through the model sequentially and cannot skip levels. By passing the four tests, the CMM provides a valid comparable model to the CMMM.

## **2. Project Management Maturity Model**

According to Kerzner (2001), “The foundation for achieving excellence in program management can be best described as the project management maturity model (PMMM), which is comprised of five levels” (p. 42). The five levels represent a different level of maturity, and although overlapping may occur, the order they are in cannot change (Kerzner, 2001, pp. 42–43). The five levels are common language, common processes, singular methodology, benchmarking, and continuous improvement (Kerzner, 2001, pp. 42–43).

The first level, common language, is when the organization “first recognizes the importance of project management” (Kerzner, 2001, p. 47). Kerzner (2001) stated that the organization may have superficial knowledge of project management or none at all



(p. 47). In the second level, common processes, the organization recognizes the need for common processes, and the successes from these processes can be repeated on other projects (Kerzner, 2001, p. 67). Singular methodology is the third level in which the organization “recognizes that synergism and process control can best be achieved through the development of a singular methodology rather than by using multiple methodologies (Kerzner, 2001, p. 77). The fourth level, benchmarking, is when the organization realizes it can improve its processes and that continuous benchmarking is the tool to accomplish it (Kerzner, 2001, p. 98). In the fifth and final level, continuous improvement, the organization “evaluates the information learned during benchmarking and implements the changes necessary to improve the project management process” (Kerzner, 2001, p. 109).

The PMMM passes the four tests by Weerdmeester et al. (2003). Kerzner’s model has five levels that are simply described and have certain requirements to be met to be considered in the level. Moreover, it passes the third and fourth tests of having a sequential order to the model that does not allow skipping levels. The model allows overlap, but not skipping. Passing these four tests proves that the PMMM is also a valid comparable model for the CMMM.

### **3. Knowledge Management Maturity Model**

A derivative of the CMM is the Siemen’s knowledge management maturity model (KMMM; Weerdmeester et al., 2003, p. 15). This maturity model assesses an organization’s knowledge management position and consists of an analysis model, a development model, and an assessment process (Weerdmeester et al., 2003, p. 15). The development model is the key as it “provides information as to how the respective key areas and topics can be best developed to reach the next maturity level” (Weerdmeester et al., 2003, p. 15). The model has five maturity levels: initial, repeated, defined, managed, and optimizing (Weerdmeester et al., 2003, p. 15). Because this model was a derivative of CMM, the names of the levels were carried over. What makes the KMMM unique is how these levels transferred into knowledge management.

The first level, initial, is when an organization’s knowledge management activities are ad hoc and sporadic (Weerdmeester et al., 2003, p. 15). The second level,



repeated, is when the organization starts to label activities as knowledge management (Weerdmeester et al., 2003, p. 15). The third level, defined, is a standardized process of sharing and creating knowledge efficiently (Weerdmeester et al., 2003, p. 15). The fourth level, managed, involves the integration and improvement of creating, sharing, and using knowledge on an organizational basis (Weerdmeester et al., 2003, p. 15). The last level, optimizing, is when knowledge management is continuously being improved and developed (Weerdmeester et al., 2003, p. 5).

The KMMM passes the four tests by Weerdmeester et al. (2003) as well. The levels are clear and defined, and there are only five levels in the KMMM. Additionally, to enter into levels, there are certain requirements to meet. The model passes the third test in that the levels are sequentially ordered, and it passes the last test of not allowing organizations to skip levels. As explained, the KMMM is also a valid comparable for the CMMM.

#### **D. CONTRACT MANAGEMENT MATURITY MODEL**

The CMMM and the associated CMMAT are the driving forces of this MBA project. We applied this model and tool to assess the maturity of the contracting departments at the SMC. Maturity, in terms of contracting, “relates to organizational capabilities that can consistently produce successful business results for buyers and sellers of products, services and integrated solutions” (Garrett & Rendon, 2005a, p. 47).

The CMMM was developed to provide organizations in the public or private sector with a visual tool to assess the six major steps of procurement (Garrett & Rendon, 2005a, p. 49). Garrett and Rendon (2005a) stated, “The maturity levels reflected in the model allow an organization to assess its level of capability for each of the six major steps in the buying or selling process” (p. 47).

The CMMAT was a product of the development of the CMMM (Garrett & Rendon, 2005a, p. 51). The tool is a survey that assesses the maturity level of an organization’s contracting processes by obtaining information about the organization’s key process areas and key practice activities (Garrett & Rendon, 2005a, pp. 51–52).



Akin to the three maturity models mentioned earlier, the CMMM passes the four tests mentioned by Weerdmeester et al. (2003). The CMMM passes the first test because its five levels are simple and clearly defined. It passes the second test as well, because an organization has to meet certain requirements to be part of that level. The model passes the third test in that its maturity levels are sequentially ordered, going from lowest to highest. Finally, the CMMM passes the last test of not allowing organizations to skip levels. Furthermore, the CMMM is unique when compared to the other maturity models because its focus is on the contract management processes.

## **E. KEY PROCESS AREAS**

Garrett and Rendon (2005a) argued that the CMMM “captures all of the CM activities, beginning with the procurement strategy planning processes and concluding with the contract termination or contract completion processes” (Garrett & Rendon, 2005a, p. 50). A distinctive feature of the CMMM is that it reflects both the buyer’s process and the seller’s process. For this study, the focus is on the buyer’s process, which is the following: (1) procurement planning, (2) solicitation planning, (3) solicitation, (4) source selection, (5) contract administration, and (6) contract closeout (Garrett & Rendon, 2005a, p. 50).

### **1. Procurement Planning**

Garrett and Rendon (2005a) described procurement planning as follows: “The process of identifying which business needs can be best met by procuring products or services outside the organization. This processes involves determining whether to procure, what to procure, how much to procure, and when to procure” (p. 55). Procurement planning has numerous key practice activities; however, three activities stand out. The first key practice activity is that the organization has created an effective process for “determining the scope of work or description of the product to be procured” (Garrett & Rendon, 2005a, p. 56). The second key practice activity is that the organization conducts effective market research to evaluate the different products and services accessible in the open market (Garrett & Rendon, 2005a, p. 56). The third key practice activity is that the statement of work (SOW) depicts the customer’s requirement



with adequate detail to promote competition (Garrett & Rendon, 2005a, p. 56). Through these key practice activities, the product of procurement planning is “a documented acquisition management plan that effectively provides a roadmap for the upcoming procurement” (Garrett & Rendon, 2005a, p. 56).

## **2. Solicitation Planning**

Garrett and Rendon (2005a), described solicitation planning as follows: “The process of preparing the documents needed to support the solicitation. This process involves documenting program requirements and identifying sources” (p. 55). Moreover, this process takes account of using standard procurement forms and documents (Garrett & Rendon, 2005a, p. 56). These documents comprise appropriate evaluation criteria that are constant with the acquisition plan from procurement planning; however, they are supple enough to allow contractors to suggest a better solution (Garrett & Rendon, 2005a, p. 56). The key practice activities of solicitation planning produce a solicitation that “facilitates accurate and complete responses from prospective contractors” (Garrett & Rendon, 2005a, p. 56).

## **3. Solicitation**

Garrett and Rendon (2005a) explained solicitation as “the process of obtaining information (bids and proposals) from prospective sellers on how project needs can be met” (p. 55). Three key practice activities foster an excellent solicitation. The first key practice activity is that the organization keeps a list of qualified bidders with information such as past performance, areas of expertise, and so on (Garrett & Rendon, 2005a, p. 56). The second key activity is asking for input from the industry when designing the solicitation (Garrett & Rendon, 2005a, p. 57). The last key activity is to conduct a pre-solicitation conference, if warranted, to ensure that the industry understands the requirement for the solicitation (Garrett & Rendon, 2005a, p. 57).

## **4. Source Selection**

Garrett and Rendon (2005a) identified source selection as “the process of receiving bids or proposals and applying evaluation criteria to select a provider” (p. 55).



There are an abundance of key practice activities to promote effective source selection, yet four are particularly significant. The first key practice activity of particular significance is that the organization evaluates proposals on three main criteria: management, technical criteria, and price (Garrett & Rendon, 2005a, p. 57). The second key practice activity is that the organization tailors the evaluation criteria to meet the goals of the procurement plan (Garrett & Rendon, 2005a, p. 57). The third key practice activity is that the organization accounts for past performance when evaluating proposals (Garrett & Rendon, 2005a, p. 57). The last key practice activity to promote an effective source selection is that the organization uses a team negotiation approach (Garrett & Rendon, 2005a, p. 57).

## **5. Contract Administration**

Garrett and Rendon (2005a) illustrated contract administration as “the process of ensuring that each party’s performance meets contractual requirements” (p. 55). Three main key practice activities result in excellent contract administration. The first is that the organization uses a team approach to monitor contract performance and fulfillment (Garrett & Rendon, 2005a, p. 57). The second key practice activity is that the organization has established processes for managing and controlling changes, and those designated personnel are the only ones making those changes (Garrett & Rendon, 2005a, p. 57). The third key practice activity is that there is an established process for cost, schedule, and performance evaluations (Garrett & Rendon, 2005a, p. 57).

## **6. Contract Closeout**

Garrett and Rendon (2005a), described contract closeout as “the process of verifying that all administrative matters are concluded on a contract that is otherwise physically complete. This involves completing and settling the contract, including resolving any open items” (p. 55). Two key practice activities are essential for proper contract closeout. The first is that the process uses checklists, templates, and forms to certify proper documentation (Garrett & Rendon, 2005a, p. 58). The other key practice activity is that the organization keeps a “lessons-learned and best-practices database for use in future projects and contracts” (Garrett & Rendon, 2005a, p. 58).



## **F. MATURITY LEVELS**

Garrett and Rendon (2005a) stated that the contract management maturity model reflects

an evolutionary increase in maturity from an ad-hoc level (Level 1), to a basic, disciplined process capability level (Level 2), to an institutionalized and repeatable processes level (Level 3), to a level characterized by processes integrated with other corporate processes resulting in synergistic corporate benefits (Level 4), and finally, to a level in which processes [are] focused on continuous improvement and adoption of lessons learned and best practices (Level 5). (p. 53)

### **1. Ad Hoc**

Garrett and Rendon (2005a) described an organization at the ad hoc, or lowest, level as an organization that “acknowledges that contract management processes exist, that these processes are accepted and practiced throughout various industries, and the organization’s management understand[s] the benefit and value of using contract management process” (p. 53). Organizations at the ad hoc level share three additional traits. The first is that “there are not any organization-wide basic contract management processes”; however, contracting officers in the organization do have some established contract management processes that they use on a periodic basis (Garrett & Rendon, 2005a, p. 53). The second trait is that the organization documents its contract management process; however, the documentation is only informal and done irregularly (Garrett & Rendon, 2005a, p. 53). The last trait of an ad hoc organization is that its managers and contracting personnel are not held accountable for following the organization’s contract management processes (Garrett & Rendon, 2005a, p. 53).

### **2. Basic**

According to Garrett and Rendon (2005a), an organization is at the basic level when “some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers” (p. 53). Moreover, these processes and standards are not organization-wide, and, therefore, there are no organizational policies requiring the consistent use of



these processes other than those required (Garrett & Rendon, 2005a, p. 53). Because a basic level organization is more mature than an ad hoc–level organization, there are some official documentation procedures for its contract management process (Garrett & Rendon, 2005a, p. 53).

### **3. Structured**

Garrett and Rendon (2005a) explained the structured level as an organization that has completely established its contract management processes and has mandated them throughout the organization (p. 53). In addition, senior executives are involved in providing guidance and decision-making (Garrett & Rendon, 2005a, p. 53). Furthermore, “the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract, such as contract strategy, contract type, terms and conditions, dollar value and type of requirement” (Garrett & Rendon, 2005a, p. 53). The organization is also formally documenting its contract management process and is beginning to automate some of it as well (Garrett & Rendon, 2005a, p. 53).

### **4. Integrated**

In reference to Garrett and Rendon (2005a), an organization is at the integrated level when it has the following four traits, with the first being that the customer is a critical member of the procurement team (p. 53). The second trait is that “basic contract management processes are integrated with other organizational core processes such as cost control, schedule management, performance management, and systems engineering (Garrett & Rendon, 2005a, p. 53). The third trait is that the organization’s management develops effective and efficient metrics to facilitate contracting decisions (Garrett & Rendon, 2005a, p. 53). The last trait of an integrated organization is that management understands its responsibility and performs it well (Garrett & Rendon, 2005a, p. 53).

### **5. Optimized**

Garrett and Rendon (2005a) described the highest level of the CMMM as optimized (p. 53). An optimized organization is one that assesses the metrics of effectiveness and efficiency of the contract management processes regularly (Garrett &



Rendon, 2005a, p. 53). Moreover, there is a continuous process for improving the contract management process as “lessons learned and best practices programs are implemented to improve the contract management processes, standards, and documentation” (Garrett & Rendon, 2005a, p. 53).

## **G. PROCESS ENABLERS**

In addition to the five maturity levels and the six key process areas, the CMMM can identify key process enablers. According to Rendon (2011, p. 42) an organization’s contract management process capability maturity level is determined by the performance in the key process areas and the extent these process enablers are incorporated. The best practices of contract management key process areas are categorized by the following groups: Process Strength, Successful Results, Management Support, Process Integration, and Process Measurement.

- Process Strength is measured by the first three survey items in each key process area. Process Strength assesses how established contract management processes are and if they are well standardized and documented.
- Successful Results are measured by the fourth survey item in each key process area as well as the sixth and seventh items in the area of source selection. Successful Results assess outcomes of each area, such structuring solicitations to facilitate complete and accurate proposals, using appropriate evaluation criteria, and evaluating past performance and technical capability in contractor proposal evaluation.
- Management Support is measured by the fifth survey item in each key process area. Management Support assesses concerns such as senior-management involvement in providing input and approval of key planning decisions and documents.
- Process Integration is measured by the sixth, seventh, and eighth survey items in the areas of procurement planning, solicitation planning, and solicitation. Process integration is measured by the eighth and ninth survey items in the area of source selection, the sixth through the ninth survey items in the area of contract administration, and the seventh survey item in the area of contract closeout. Process Integration assesses how processes are integrated across each of the key process areas.
- Process Measurement is measured by the final two survey items in each key process area as well as the eighth survey item in the area of contract closeout. Process Measurement assesses concerns such as the efficiency



and effectiveness of metrics in process evaluation and process improvement.

## **H. CURRENT APPLICATIONS OF THE CMMM**

In December 2006, Walter Ludwig and Alexander Moore completed a study titled *Analysis of Naval Facilities Engineering Command's (NAVFAC) Contracting Processes Using the Contract Management Maturity Model (CMMM)*. Ludwig and Moore (2006) studied NAVFAC Mid-Atlantic using the CMMM and found it to be at a level of structured across all key process areas. Ludwig and Moore (2006) recommended that NAVFAC form a process improvement working group and follow the seven-step process of project management process improvement (Wysocki, 2004) to reach the next level of integrated.

In December 2007, Carl Jackson wrote a Naval Postgraduate School (NPS) MBA professional report titled *Analysis of the 314th Contracting Squadron's Contract Management Capability Using the Contract Management Maturity Model*. Jackson (2007) found the 314th Contracting Squadron to have a level of structured in the areas of procurement planning, solicitation planning, and solicitation. The 314th had integrated source selection processes and basic closeout processes. Jackson recommended additional training as well as the integration of contracting process with customers, such as finance and civil engineering. He also proposed that automating many of the processes could help the 314th reach higher levels of maturity (Jackson, 2007).

Also in December 2007, Brian Sheehan, Stuart Moats, and David VanAssche submitted their NPS MBA professional report, *Analysis of the Contracting Processes and Ethical Culture at Ogden Air Logistics Center, Hill AFB, UT*. In this study, Sheehan et al. (2007) looked at five buying organizations at Hill Air Force Base: (1) the contracting directorate, (2) the 75th Air Base Wing, (3) the 84th Combat Sustainment Wing, (4) the 526th Intercontinental Ballistic Missile (ICBM) Systems Wing, and (5) the 508th Aircraft Sustainment Wing. The average level of contract maturity was structured, with some organizations falling to basic for a few key areas, and the 508th being ad hoc in the area of closeout. Sheehan et al. (2007) recommended that processes be formally documented for continuity in addition to training.



Christopher Kovack (2008) completed an NPS thesis titled *Analysis of Contracting Processes and Organizational Culture at Naval Air Systems Command* in June 2008. Kovack administered the CMMAT to each of the buying organizations at Naval Air Systems Command (NAVAIR), AIR 2.2 through AIR 2.6. Results generally showed a structured level of maturity across all areas except contract closeout, which was basic. Additionally, a few of the organizations were able to reach the integrated level on some of the areas. Kovack (2008) recommended that NAVAIR compare the results of the CMMAT with those at Naval Sea Systems Command (NAVSEA) and the Space and Naval Warfare Systems Command (SPAWAR) to help find best practices. He emphasized the need for constant process improvement and recommended that another CMMAT assessment be done every two years to monitor improvements (Kovack, 2008).

Kevin Puma and Beth Scherr (2009) facilitated an NPS joint applied project when they wrote *Assessing Contract Management Maturity: U.S. Army Joint Munitions and Lethality Contracting Center, Army Contracting Command, Picatinny Arsenal* in September 2009. Six buying organizations were included in their study that also showed the lowest process maturity in the area of contract closeout. Puma and Scherr (2009) focused on the identification and implementation of best practices as a recommendation for process improvement.

In December 2009, Dina Jeffers authored an NPS joint applied project titled *Contract Specialist Turnover Rate and Contract Management Maturity in the National Capital Region Contracting Center: An Analysis*. Most of the buying organizations were rated basic or ad hoc across all areas. Although Jeffers (2009) did not find a correlation with personnel turnover and the low contract management maturity, she did recommend the institutionalizing of all contract management best practices.

Rendon has completed a number of CMMAT and CMMM assessments under the NPS Acquisition Research Program (ARP). These include the 2010 *Assessment of Army Contracting Command's Contract Management Processes* (2010) and the 2011 *Assessment of Army Contracting Command's Contract Management Processes (TACOM and RDECOM)*. In the 2010 study, Rendon looked at the Aviation and Missile Command (AMCOM), the Joint Munitions and Lethality Command (JM&L), and the National



Capital Region (NCR). In the 2011 study, Rendon looked at the Army's Tank-Automotive and Armaments Command (TACOM) and the Research, Development, and Engineering Command (RDECOM). Rendon (2010, 2011) recommended integration with the customers, documentation of processes, the guidance and direction of leadership, and a roadmap for process improvement.

## **I. THIS ASSESSMENT**

We chose the CMMM for this project to determine the maturity level of contracts management at the SMC at Los Angeles Air Force Base, CA, and the AFLCMC at Wright-Patterson Air Force Base, Dayton, OH. Determining the maturity level of contracts management is significant because the GAO (2006) "has had contract management on its high-risk areas" (p. 2) since 1992. In an environment in which resources are scarce, every dollar saved is another dollar available for other missions. Therefore, it is critical for the Air Force to know how mature its contract management processes are. In conjunction with this directive, our research team analyzed other maturity models to compare with the CMMM.

The Space and Missile Systems Center is a prime organization for researchers to assess contract management maturity, as it has already been the focus of CMMM research. In the spring of 2003, contracting personnel in the directorates of contracting took a survey assessing the SMC's contract management maturity (Garrett & Rendon, 2005a, p. 78). The SMC was selected again, as it remains an ideal case study "because it has a significant number of large outsourced programs involving numerous complex, multi-year contracts, which are in various phases of their project and contract lifecycle" (Garrett & Rendon, 2005a, p. 78). Nine years after the initial assessment, we attempt to see whether the SMC has matured in contracts management and how it can still be improved upon. Moreover, the AFLCMC is a new program to CMMM research, and, similar to the SMC, it is an ideal case study because it is one of the major centers for Air Force weapon system acquisitions. Akin to the SMC, the AFLCMC has numerous programs ranging from the F-22 to the new KC-46 tanker that are multifaceted and have long acquisition life cycles.



## **J. SUMMARY**

In this chapter, we highlighted three maturity models to compare with the CMMM. We then described the CMMM, explaining key activities, key practice activities, and maturity levels. We then went on to explain why the CMMM and the CMMAT were chosen for their research. Finally, we discussed previous research in which the CMMM was used. In the next chapter, we provide background on the SMC and the AFLCMC, which were subjects of the CMMAT and CMMM.



### **III. THE SPACE AND MISSILE SYSTEMS CENTER AND THE AIR FORCE LIFE CYCLE MANAGEMENT CENTER (WRIGHT-PATTERSON)**

#### **A. CHAPTER INTRODUCTION**

In this chapter, we provide information on CMMM case study organizations, the SMC and the AFLCMC-WP. Notes are included about the makeup of the Air Force Space Command (AFSPC), Air Force Materiel Command (AFMC), the SMC, the AFLCMC-WP, the SMC Directorate of Contracting, and the AFLCMC-WP Directorate of Contracting. We also discuss the contract process management tools currently in use at each of the organizations.

#### **B. THE SMC ORGANIZATION**

The SMC coins itself as “The Birthplace of Military Space” (Los Angeles Air Force Base [AFB], 2012). The SMC is a unit under the authority of the AFSPC.

The AFSPC is responsible for organizing, training, and equipping mission-ready space and cyberspace forces and capabilities for the North American Aerospace Defense Command, U.S. Strategic Command, and other combatant commands worldwide (“The Book 2011,” 2011). The AFSPC is composed of over 43,000 personnel to include over 13,000 active duty military, almost 9,000 civilians, and almost 12,000 contractors. Almost 9,000 Air Force Reserve and Air National Guard personnel also belong to the AFSPC. The AFSPC includes two numbered air forces and four centers and offices. The 14th Air Force is the Air Force Strategic Space operational force, and the 24th Air Force is the Air Force’s information and cyber warfare operational force. The Air Force Spectrum Management Office, Space Innovation and Development Center, Air Force Network Integration Center, and SMC all belong to the AFSPC (“The Book 2011,” 2011).

The three-star lieutenant general who is the commander of the SMC (SMC/CC) is also the Air Force Program Executive Officer for Space (AFPEO/SP). Although the military chain of command flows through the AFSPC, as AFPEO/SP, the SMC/CC has



direct acquisition authority under the Assistant Secretary of the Air Force for Acquisitions (SAF/AQ). The AFPEO/SP manages the research, design, development, acquisition, and sustainment of satellites and the associated command and control systems. His rather extensive portfolio includes military satellite communication, missile warning, navigation and timing, space-based weather, space launch and test ranges, certification for launch, space superiority, responsive space, and other emerging evolutionary space programs (Air Force Portal, 2012e).

The SMC is the home of nine systems programs directorates and divisions, executing a budget of over \$10 billion annually (Los Angeles AFB, 2012). The Global Positioning Systems Directorate is a joint program office “responsible for development, launch and sustainment of the Global Positioning System, the world’s premier navigation and timing standard” (Los Angeles AFB, 2012). The Space Superiority Systems Directorate is “responsible for equipping the joint warfighter with unrivaled offensive and defensive counterspace, space situation awareness and special access capabilities required to gain, maintain and exploit space superiority” (Los Angeles AFB, 2012). The Launch and Range Systems Directorate “provides DoD and the National Reconnaissance Office with assured access to space through launch systems modernization, sustainment and development of worldwide range capability for all national security missions” (Los Angeles AFB, 2012). The Defense Weather Systems Directorate “equips worldwide strategic and tactical forces with weather and space environmental data for planning and executing aerospace, ground and naval operations” (Los Angeles AFB, 2012).

The Military Satellite Communications (MILSATCOM) Systems Directorate “plans for, acquires and sustains space-enabled global communications in support of the president, secretary of defense and combat forces” (Los Angeles AFB, 2012). The Space Logistics Directorate “sustains and modifies worldwide USAF/DoD space weapon systems to include terrestrial and space weather, global positioning systems, launch range control, satellite command and control, secure communications, and missiles early warning” (Los Angeles AFB, 2012). The Space Development and Test Directorate “serves as primary provider of launch, spaceflight and on-orbit operations for the entire DoD space research and development community” (Los Angeles AFB, 2012). The



Missile Defense Systems Division “supports the Missile Defense Agency’s space assets” (Los Angeles AFB, 2012). The Satellite Control and Network Systems Division “modernizes and sustains the Air Force Satellite Control Network , including two control nodes and nine worldwide Remote Tracking Stations to assure responsive, effective satellite support to warfighting forces” (Los Angeles AFB, 2012).

### **C. THE SMC DIRECTORATE OF CONTRACTING ORGANIZATION**

Along with the systems directorates described in the previous section, the SMC has a number of functional directorates who, under a matrix program, provide subject-matter expertise and capabilities to the program managers in the systems offices. These matrixed personnel are located with, and work for, the program office, but they are given authority and are evaluated by their functional directors. These functional directorates include financial management, systems engineering, program integration, and contracting.

The Directorate of Contracting (Note: SMC/PK is used interchangeably as an office symbol for the Directorate of Contracting as well as the duty symbol of the Director of Contracting) is headed by a member of the Senior Executive Service (SES) and delegated the Senior Center Contracting Official (SCCO). With authority over all contracting personnel, SMC/PK has a contracting division chief for a number of advisory and staff divisions, as well as a division chief in each of the system program offices. The division chief is normally a GS15, with some GS14s and lieutenant colonels as exceptions. In all, the SMC/PK is composed of approximately 350 contracting professionals (J. Huggins, personal communication, May 2012).

### **D. THE AFLCMC–WP ORGANIZATION**

The AFLCMC is one of five centers under the AFMC. Its mission is to acquire and support war-winning capabilities and it claims to be the single center responsible for total life-cycle management of Air Force weapon systems (Wright–Patterson Air Force Base [AFB], 2012).



The AFMC delivers war-winning technology, acquisition support, sustainment, and expeditionary capabilities to the warfighter (“The Book 2011,” 2011). The AFMC is composed of over 84,500 personnel to include over 19,000 active duty military, almost 64,000 civilians, and over 1,000 Air Force Reserve and Air National Guard personnel (“The Book 2011,” 2011). The AFMC includes major product centers, test centers, logistics centers, and research laboratories. The National Museum of the Air Force is also a part of the AFMC (“The Book 2011,” 2011).

A three-star lieutenant general is also the commander of the AFLCMC (AFLCMC/CC). However, there are 10 Program Executive Officers (PEO) under the AFLCMC/CC who each get acquisition authority directly from the Air Force Service Acquisition Executive (SAE). The SAE is the Assistant Secretary of the Air Force for Acquisition (SAF/AQ), located at the Pentagon in Washington, DC (Wright–Patterson AFB, 2012). The PEOs include PEO Agile Combat Support, PEO Intelligence Surveillance Reconnaissance (ISR), PEO Mobility, PEO Tanker, PEO Fighter/Bomber, PEO Strategic Systems, PEO Armament, PEO Battle Management, PEO Command Control Communications Intelligence (C3I), and PEO Business Enterprise Systems Directorate (Wright–Patterson AFB, 2011)

The AFLCMC was activated on July 9, 2012. The AFLCMC essentially consolidated the Electronic Systems Center (ESC) at Hanscom Air Force Base, the Air Armament Center (AAC) at Eglin Air Force Base, the Air Force Security Assistance Center at Wright–Patterson Air Force Base, and the ASC at Wright–Patterson Air Force Base. Our research targets the legacy ASC program offices still operating out of Wright–Patterson Air Force Base. AFLCMC–WP offices include the Agile Combat Support Directorate, the Fighters and Bombers Directorate, the ISR Directorate, the Tanker Directorate, and the Mobility Directorate, each with a respective PEO as mentioned previously. Additionally, AFLCMC–WP has an Enterprise Acquisition Division and an Operational Contracting Division. The Agile Combat Support Directorate has a mission to “provide affordable cross-cutting simulator, trainer aircraft, combat electronic, propulsion, survival, human centered systems, environmental engineering, and alternate fuels capabilities to U.S. and allied air, ground, and naval forces” (Air Force Portal,



2012c). The Fighters and Bombers Directorate has a mission to “develop, acquire, field, and modernize existing and advanced aircraft strike capabilities and support life-cycle management (in concert with Air Logistics Center supported and supporting commanders) of the wing portfolio for the United States and coalition partners” (Air Force Portal, 2012a). The Fighters and Bombers Directorate includes the F-16, F-22A, B-1, B-2, F-15, F-35, B-52, and others (Air Force Portal, 2012a). The ISR Directorate strives to “develop, acquire, field, modernize and sustain the world’s best network-ready intelligence, special forces, surveillance and reconnaissance capabilities today and tomorrow” (Air Force Portal, 2012d). The Tanker Directorate is primarily focused on modernization of the new KC-46 tanker. The Mobility Directorate portfolio includes the C-5, C-17, C-130 variants, and other aircraft (Air Force Portal, 2012b). The Enterprise Acquisition Division does specialized contracting for the AFMC, and the Operational Contracting Division does base support contracting for Wright–Patterson Air Force Base.

#### **E. THE AFLCMC DIRECTORATE OF CONTRACTING ORGANIZATION**

Just like the SMC, the AFLCMC matrixes functional experts in engineering, financial management, program integration, and other functional areas to include contracting. The AFLCMC Directorate of Contracting is organized similarly to the SMC/PK with an SES director, staff division chiefs, and division chiefs in the program offices leading teams of contracting professionals. In all, the AFLCMC–WP offices and staff have approximately 650 contracting professionals (D. Keller, personal communication, July 2012).

#### **F. CONTRACT MANAGEMENT PROCESS TOOLS**

We traveled to both Los Angeles Air Force Base and Wright–Patterson Air Force Base to discuss with various contracting leaders their methods of contract process management and, specifically, to look for tools they may have developed to aid in contract process management.



## **1. Process Tools at the SMC**

None of the buying organizations we spoke with at SMC/PK identified any process management tools that they had developed. Many of the chiefs and deputy chiefs of contracting at the buying organizations referenced the tools being maintained by the SMC/PK staff as adequate and helpful. They also voiced some concern that tools developed at the lowest levels may not reflect the approved procedures of the SMC/PK and could wind up being counterproductive. Additionally, there were thoughts that the complexity and uniqueness of individual actions, beyond what is described in the SMC/PK-provided tools, are too rarely repeated to be worth developing specialized tools.

The SMC/PK, at a staff level, has developed a robust suite of process management and contract management analysis tools. Using Microsoft SharePoint, SMC/PK has built a “Buyer’s Homepage” with subpages for each division, buyer tools, metrics, training, and other items of interest. The homepage itself, shown in Figure 1, contains links to the Buyer’s Handbook and Contracting Directive, as well as other samples, checklists, and guides.

The SMC Contracting Directive contains all of the local guidance to supplement the Federal Acquisition Regulation (FAR; 2012), Defense Federal Acquisition Regulation Supplement (DFARS; 2012), and Air Force Federal Acquisition Regulation Supplement (AFFARS; 2012). The Directive is organized in the same manner as the FAR, and the SMC/PK tool links each piece of guidance back to the original reference source. The SMC Buyer’s Handbook includes process guidance and sample language for most common processes that contract specialists face day to day. The Handbook is written in the same order as the table of contents used in each contract file and follows the logical order of events for each contract action. Again, the SMC/PK tool links each piece of guidance in a user friendly, easy-to-access, Web-based system.



InsideSMC > SMC/PK - Directorate of Contracting

# Buyer's Homepage

InsideSMC SMC Staff Directorates/Divisions 61 ABG SMC Library SMC Help Desk

SMC/PK - Directorate of Contracting Divisions Buyer Tools PK Metrics Dashboard SMC/PK Training PK Newsletter PK Staff Security Program PK Safety Board PK Social Council Chief's Information Page

SMC/PK - Directorate of Contracting > Tools > Buyer's Homepage

## BUYER'S HANDBOOK

Helpful Tips

0	1	2	3	4*	5*	6*	7	8*	9
10	11*	12*	13	14	15	16	17	18	19
22	24	25	26	27	28*	29	31	32	33*
34*	36	39	40	41	43	45	46	47	48
49	50*	51	52*	53	55	56*	57*	58	59*
60	62*	64	66*	67	68	69	70	72	73*
74	75	76	77	80	81	82	84	APP-A	APP-C

\*Buyer Created Doc. (If Applicable to Acquisition)

Top	ITEM NO.	BUYER'S HANDBOOK
	0	INTRODUCTION
	1	Purchase Request or Procurement Directive a. Requirements Document - Purchase Request & CcAr - Procurement Directive - CCBD, or other equivalent document b. New Start Validation c. Ozone Depleting Substance Certificate (AFFARS 5323.804(b)) d. Other
	2	Acquisition Planning a. Acquisition Strategy Panel (ASP) b. Acquisition Strategy (AS)/Acquisition Plan (AP)/LCMP c. Performance Plan - Services d. Source Selection Plan (MP5315.3) e. Other
	3	Source List/Market Research Results
	4*	Small Business Coordination Record (DD Form 2579)
	5*	Synopsis Record
	6*	Other Than Full and Open Competition Authority (O & A and Related Correspondence)
	7	Foreign Disclosure Office Review
	8	Justifications & Approvals (J&As), Determinations & Findings (D&Fs), and Other Determinations & Approval Documents

## CONTRACTING DIRECTIVE

Helpful Tips

0	1	2	3	4	5	6	7	9	10
12	14	15	16	17	19	27	32	33	34
35	42	43	45	47	49	51	53	CC	

Top	SMC CONTRACTING DIRECTIVE	FAR	DFARS	AFFARS
0	Introduction/Summary of Changes	N/A	N/A	N/A
1	Federal Acquisition Regulation System (FAR Part 1)	1	201	5301
1.3	Agency Acquisition Regulations (FAR 1.3)	1.3	201.3	5301.3
1.4	Deviations from the FAR (FAR 1.4)	1.4	201.4	5301.4
1.6	Career Development, Contracting Authority, and Responsibilities (FAR 1.6)	1.6	201.6	5301.6
1.90	Clearance Process (AFFARS 5301.90)	N/A	N/A	5301.90
1.91	Ombudsman (AFFARS 5301.91)	N/A	N/A	5301.91
Top	SMC CONTRACTING DIRECTIVE	FAR	DFARS	AFFARS
2	Definitions of Words and Terms	2	202	5302
2.1	Definitions (FAR 2.1)	2.1	202.1	5302.1
Top	SMC CONTRACTING DIRECTIVE	FAR	DFARS	AFFARS
3	Improper Business Practices and Personal Conflicts of Interest (FAR PART 3)	3	203	5303

## TOPIC RESEARCH

Helpful Tips

A	B	C	D	E	F	G	H	I
J	K	L	M	N	O	P	Q	R
S	T	U	V	W	X	Y	Z	

Top	A	FAR	DFARS	AFCC
DAU	A&E (Architect & Engineer)	12, 36	212, 236	5312, 5336
DAU	A-76	37	237	5337
DAU	Ability One	8	208	5308
DAU	Acquisition Planning	7	207	5307
DAU	Acquisition Strategy Panel (ASP)	7	207	5307
DAU	Administrative Matters	4	204	5304
DAU	Advisory & Assistance Services	37	237	5337
DAU	Affirmative Procurement (AKA Green Procurement)	23	223	5323
DAU	AFWAY	39	239	5339
DAU	Air Force Proposal Adequacy Checklist (AFPAC) -- See MP5315.4	15	215	5315 (Cost / Pricing)
DAU	Alternate Dispute Resolution	33	233	5333
DAU	Appeals	33	233	5333
DAU	Architect-Engineer Contract Administration Support System (ACASS)	42	242	5342
DAU	Audits	42	242	5342
DAU	Award Fee	16	216	5316
DAU	Award Term	16,17	216,217	5316, 5317
Top	B	FAR	DFARS	AFCC

Figure 1. SMC/PK Buyer's Homepage (SMC/PK, August 2012)

In addition to the Buyer's Handbook and Contracting Directive, the SMC/PK has developed an interactive tool called "Processes by Elimination." Most contract actions only require a fraction of the steps, samples, and procedures available. Process by Elimination, shown in Figure 2, allows the buyer to input the type of contract action as well as other threshold and scope characteristics. As the buyer provides the system with more details, Process by Elimination removes non-applicable forms, templates, and guides, leaving the buyer with a streamlined path to complete the contract action.



View All Site Content  
Buyer's Homepage  
Pictures  
Documents  
Lists  
Discussions  
Sites  
People and Groups  
Buyer's Documents and Links  
Employee Tracking  
Recycle Bin

## PROCESSES BY ELIMINATION

☒ Sole Source  
☐ Source Selection

☐ <500Million  
☒ >500Million

☐ <10Million  
☒ MOD

☐ Sole Source  
☐ Source Selection

PLANNING

**Technical Baseline Dev.**  
Acquisition Start  
Ace Intro  
ICD/CDD  
Market Research  
Risk Trades  
TRD  
TRD/Specs

SOLICITATION

**Acquisition Strategy Dev.**  
Heading Check  
Kick-Off Meeting  
SOO Workshop  
Risk Mgmt  
Market Research  
ESIS  
ASP Process & Template  
AS Reviews & ASP  
RFP Overview  
Documented Strategy

EVALUATION

**RFP Development**  
RFP Overview  
Source Selection Overview  
Writing MC/PR  
Writing Past Perf.  
Draft RFP  
Industry & SMC Reviews  
Draft RFP  
SRB  
Final RFP  
Release Brief & Bus. Clearance  
SSP  
Release RFP  
Preparing for Source Sel.

AWARD

**Source Selection**  
Recorder  
PP & Tool  
Receive PP Volume  
MC/PR & Tool  
Receive Other Volume  
Initial Eval  
Comp Range Brief  
Audit/Rate Review Received  
Discussions  
Pre-Neg. Clearance Session  
FPDS Review  
Decision Briefing  
Negotiations Completed  
Contract Award and Debriefing

POST AWARD

**Post Award**  
Post Award  
CPARS  
Tech  
Feedback to Ace  
  
**DAB/PAB - IPA**  
IPA - Overview  
IPA - Orientation  
ICA  
DAB/PAB  
ADM

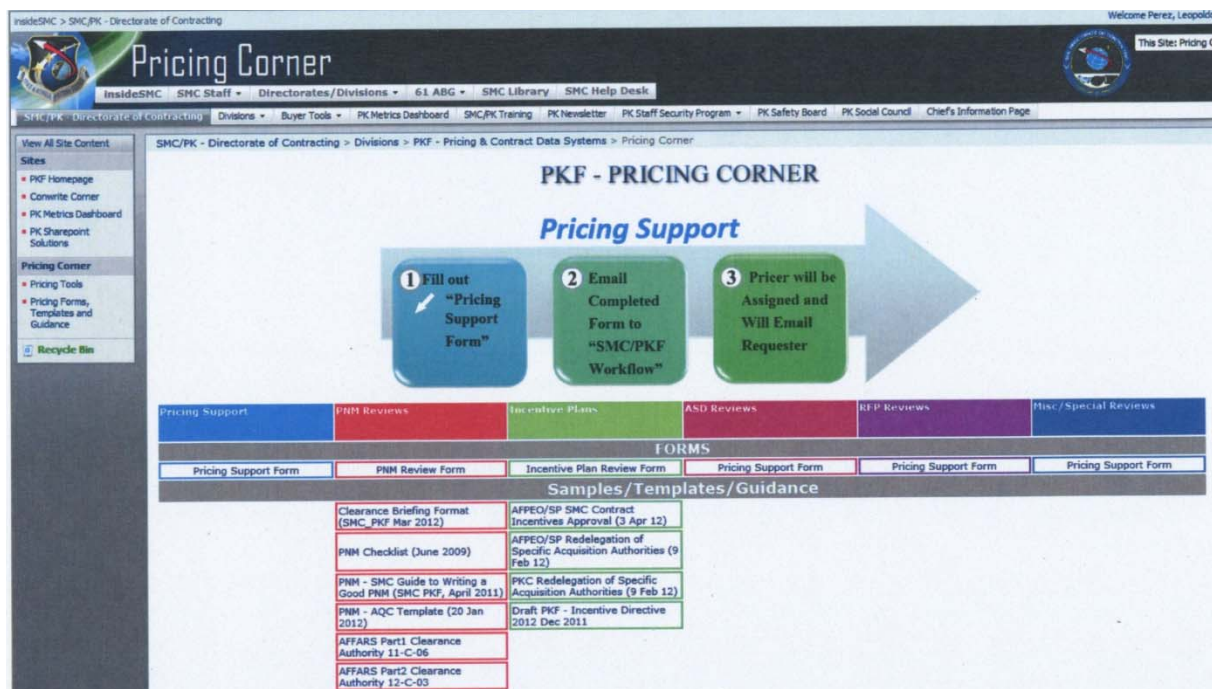
Forms				
Contract File Content Index (Systems and Logistics) Template [SAF_AQCP] (Feb 05) [replaces old AF Form 3019]	SAF/AQC AF Proposal Adequacy Checklist (AFFAC)	Initiation of Actions After Receipt of Proposal (Sep 07)	Request for Proposal (RFP) (Jan 10)	[Review Requests] Committee Review Request (to SMC_PKC Committee)
[Review Requests] Request for Contract Writing (to SMC_PKC Contract Writing)	AFFARS OCI Policy Memo 10-c-15	Justification and Approval (JandA) Checklist (SMC_PKC, Nov 09)	SMC OCI Mitigation Plan Checklist (May 07)	Delivery Order Made Pursuant to Blanket Purchase Agreement (BPA) (Jan 10)
[Review Requests] Request for Contract Award (to SMC PK Contracts Distro) 1 Feb 2012	Administrative Changes_Administrative Modifications (Sep 05)	Modification Exercising Option (Jan 10)	Source Selection File Checklist (May 10)	Price Negotiation Memorandum (PNM) Checklist (AFFARS IG 5315.406-3) (Jun 09)
[Review Requests] Legal Review Request (AF Form 3059) (to SMC_JAQ Legal)	Clause_Checklist_(PKC)_2010	New Contract or New Work Supplemental Agreement (SA) (Jun 10)	Supplemental Agreement for Changes Made Pursuant to Basic Contract [NOT NEW WORK] (Jan 10)	Unfinalized Contract Action (UCA) or Change Order Issued Pursuant to a Clause of the Basic Contract (Apr 10)
[Review Requests] FPDS Review Request (to SMC PK FPDS REVIEW WORKFLOW) 1 Feb 2012	Delivery Order Made Pursuant to Basic Contract Order Against Federal Supply Schedule (Jan 10)	Price Negotiation Memorandum (PNM) Checklist (AFFARS IG 5315.406-3) (Jun 09)	Technical Evaluation Checklist (AFSPC_A7K, 1 Nov 08)	Funding Modification (Jul 08)
[Review Requests] FPDS Review Request (to SMC PK FPDS REVIEW WORKFLOW) 1 Feb 2012			Proper Use of Non DoD Contracts (Oct 05)	

Samples and Templates				
[Acquisition Strategy] Acquisition Strategy Document (ASD) Template (07 Oct 08)	[Contract Writing] Preparation of Contract Modifications - Sample Modification Language (SMC_PK)	[OCI] OCI Request for Access to ConWrite for Contracted Acquisition Business Personnel (ABP) (28 Aug 07)	[Guides] Air Force Contracting Guides, Templates and Samples (G-T-S) (SAF/AQC)	[UCA] Format for Authority to Issue an Unfinalized Contractual Action (UCA) - Change Order

**Figure 2. Processes by Elimination (SMC/PK, August 2012)**

On top of the guides and tools, the SMC/PK has allowed space for each staff or buying division to add additional resources to the Buyer's Homepage. PKF has taken advantage of this and created the "PKF—Pricing Corner." The Pricing Corner, shown in Figure 3, includes additional samples, templates, and guidance on pricing specific areas such as pre-negotiation memorandums and incentive plans. This tool also has opened up new options for electronic submittal and review requests for buyer support by PKF.

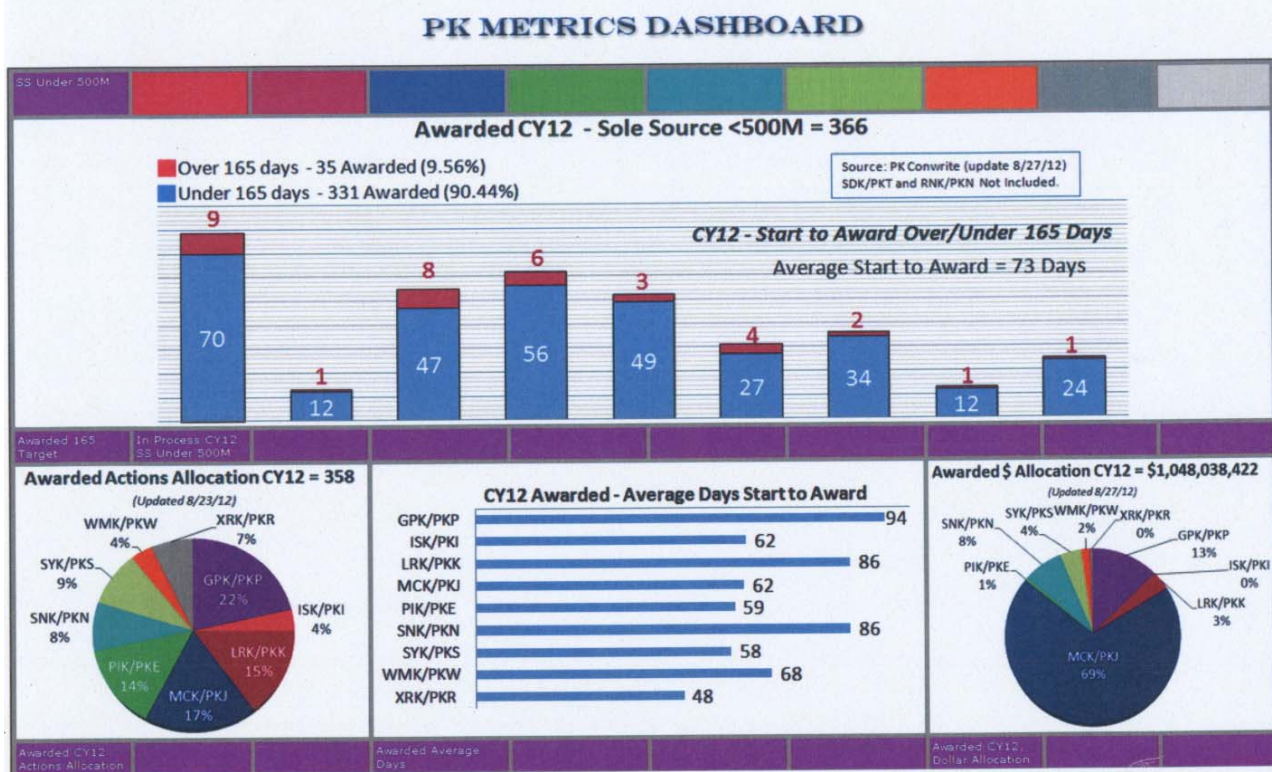




**Figure 3. Pricing Corner (SMC/PK, August 2012)**

SMC/PK has also developed a custom collection of management analysis tools. They were able to link SharePoint to the SMC contract writing software, ConWrite, in order to pull and track specific data points preferred by the SMC staff leadership. Calling it the “PK Metrics Dashboard,” their tool gives leadership a view of the entire SMC workload and additional granularity into actions grouped by office, type, dollars, or a variety of other characteristics as shown in Figure 4. While called metrics, there was no evidence that these were linked to specific goals or standards and used to measure performance.



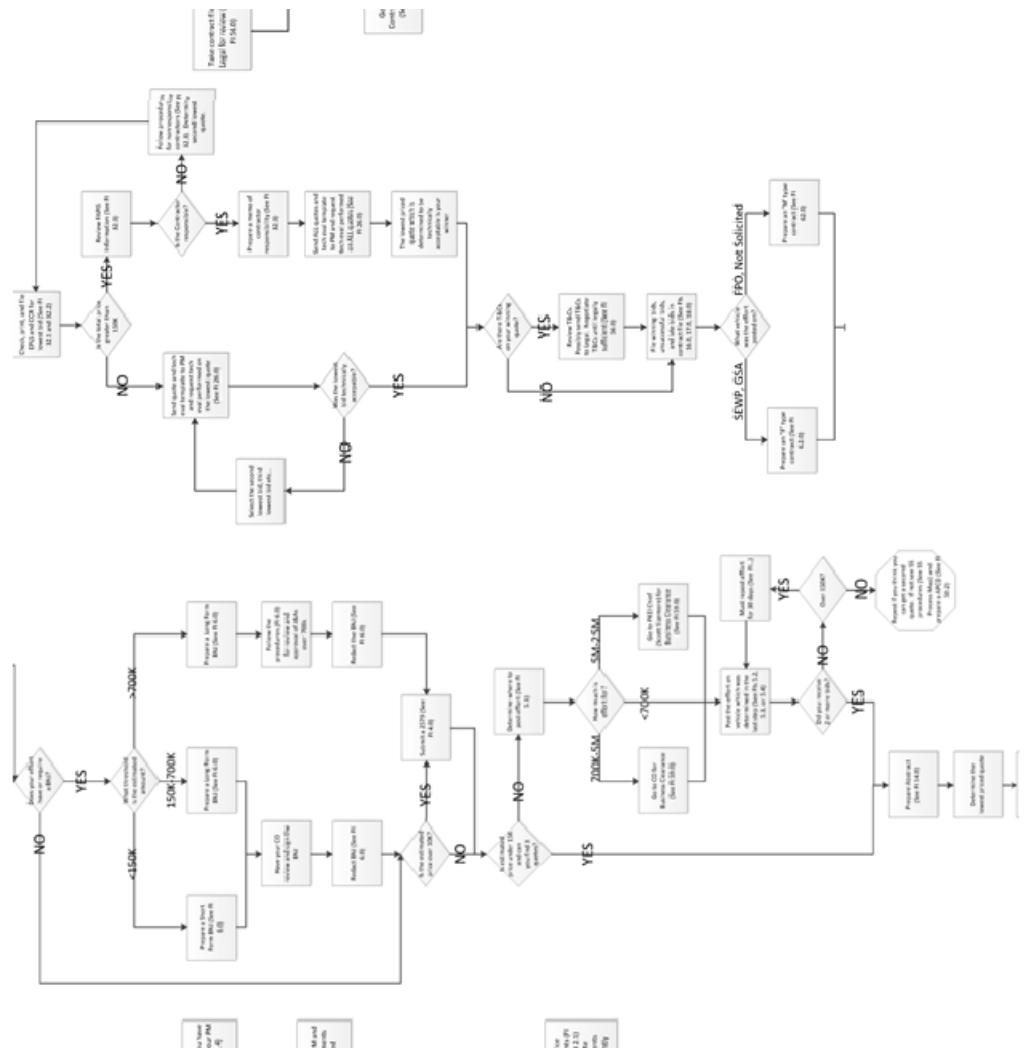


**Figure 4. PK Metrics Dashboard (SMC/PK, August 2012)**

## 2. Process Tools at the AFLCMC-WP

At Wright-Patterson Air Force Base, most of the buying offices did not identify any contracting process management tools. Many of the chiefs felt that their actions were too complex and unique to develop a step-by-step guide because no contract action was the same. However, one buying office created a clearly documented process-based guide for their junior buyers. Called “IT Contracting for Dummies” and “A&AS Contracting for Dummies,” these documents provide a how-to guide for every tab in their contract file table of contents. This includes regulations, local guidance, samples, and templates, all available on their SharePoint site. Additionally, they have created robust flow charts for each of their major repetitive actions (see Figure 5).





**Figure 5. Contracting Flow Charts (AFLCMC, August 2012)**

Finally, the AFLCMC contracting staff is working with the greater AFLCMC on inputs into the “AFLCMC Process Guide.” This publication is being developed to capture and standardize processes throughout the acquisition life cycle at the AFLCMC beyond just contracting. The AFLCMC/PK is responsible for drafting a number of the contracting-specific chapters such as “AFLCMC Process for Pre-Award” and other contracting topics. However, this publication is in the early stages and the contracting chapters are not yet available to AFLCMC–WP buyers.



## **G. SUMMARY**

In this chapter, we provided background information on the SMC, the AFLCMC–WP, and their parent and subordinate organizations. We also discussed the process management tools these organizations use. In the next chapter, we give an analysis of the contract management maturity of each of these organizations.



## **IV. ASSESSMENT RESULTS AND PROCESS IMPROVEMENT RECOMMENDATIONS**

### **A. CHAPTER INTRODUCTION**

In this chapter, we discuss the results of the CMMM assessment. The CMMAT survey was deployed to 10 contracting organizations at the SMC and seven organizations at the AFLCMC. The purpose of this assessment was to determine the contract management maturity level at each organization to include an overall assessment of the contracting centers. Through this assessment, an overview of best practices and the use of those key enablers were also highlighted. In this chapter, we also review the use of organizational processes and their effectiveness.

### **B. SELECTION OF STUDY PARTICIPANTS**

The CMMM is specifically designed to focus on an organization's key contract management process areas and activities to provide baseline assessment of process maturity (Garrett & Rendon, 2005a). While quantitative statistical analysis was not used to prove a hypothesis, qualitative and descriptive statistical analysis of the quantitative data was used. The research relies heavily on the standardized selective qualifying requirements for survey participants. The selection of targeted study participants minimizes the effects of potential bias and optimizes the quality of collected data. The participants needed to have attained a Defense Acquisition Workforce Improvement Act (DAWIA) Level II or higher in Contracting. Adherence to these strict requirements minimized bias in the responses and established the required professional competence from the respondents.

The importance of selecting respondents with DAWIA Level II certifications as well as contracting officer warrants established the level of experience and served as a basis in the assumption that this group of contracting personnel would be the most knowledgeable about the organization's contract management processes. The study did not intend to measure the respondent's individual knowledge of contract management principles. Rather, it assumed that the respondents, through the DAWIA certification



process, education, and training, understand the organization's contract management processes. It assumed they had gained sufficient experience to allow them to adequately complete the CMMAT survey.

### C. ADMINISTRATION OF THE CMMAT ASSESSMENT

This study used the CMMAT survey for buyers at the SMC and the AFLCMC. The six key process areas are procurement planning, solicitation planning, solicitation, source selection, contract administration, and contract closeout. The CMMAT uses a 5-point Likert scale to score the responses. The possible responses' corresponding scores were "Don't Know" (0), "Never" (1), "Seldom" (2), "Sometimes" (3), "Usually" (4), and "Always" (5). The mean score for each question in each process was summed to determine a total process score. The maturity of the specific process area was based on the accumulated overall score. The accumulated score was then converted based on a 10-question and 11-question scale to determine the maturity level, as seen in Table 3.

**Table 3. Conversion Table**

<b>10-Question Conversion Table (50 Points)</b>	
<b>Mean Score Total</b>	<b>Maturity Level</b>
0–24	Ad Hoc
25–36	Basic
37–42	Structured
43–46	Integrated
47–50	Optimized
<b>11-Question Conversion Table (55 Points)</b>	
<b>Mean Score Total</b>	<b>Maturity Level</b>
0–27	Ad Hoc
28–40	Basic
41–46	Structured
47–51	Integrated
52–55	Optimized

The CMMAT was administered through an online survey. The use of online surveys was determined to be more efficient for those analyzing and for those taking the survey. The survey was deployed at the SMC on July 24, 2012, and closed on August 19,



2012. The survey was also deployed at the AFLCMC on July 31, 2012, and closed on August 24, 2012. The voluntary survey was disseminated to the SMC/PK and the AFLCMC/PK to encourage participation by the subordinate organizations.

#### **D. RESULTS OF THE CMMAT AT THE SMC**

The results and analysis of the CMMAT assessment for the SMC and the AFLCMC–WP are provided in this section. This section also provides the results of the contract management process maturity of both the SMC and the AFLCMC–WP organizations. The SMC organizations included in the assessment are Infrared Space Systems (PKI), Military Satellite Communications (PKJ), Launch & Range Systems (PKK), Space Logistics (PKL), Satellite Control & Network (PKN), Operational Contracting (PKO), Global Positioning Systems (PKP), Space Superiority Systems (PKS), Space Development & Test (PKT), and Defense Weather Systems (PKW). The AFLCMC–WP organizations included are Agile Combat Support Directorate (WNK), Enterprise Acquisition Division (PKE), Fighters and Bombers Directorate (WWK), ISR Directorate (WIK), KC-46 Tanker Modernization Directorate (WKK), Mobility Directorate (WLK), and Operational Contracting Division (PKO).

##### **1. Contract Management Maturity of SMC Organizations**

In the SMC, a total of 43 surveys were completed. There were a total of 73 eligible contracting officials yielding a response rate of 58%, as shown in Table 4. Table 5 codes the letter to each organization at the SMC that participated in the survey. Table 6 and Table 7 provide the organization survey-response means to include the SMC as a whole. Figure 6 is a graphical representation of the maturity levels for each contracting organization at the SMC. The graphical representation for each organization is first derived from the survey-response mean. Each organization's survey-response mean is then applied to the 10- or 11-question conversion table (Table 3) for each key contracting process area. The mean then represents the level of maturity for each organization at each key contracting process area.



**Table 4. SMC Survey Response Rate**

Organization	Eligible Responses	Completed Responses	Response Rate
SMC	73	43	58%

SMC organizational results revealed a wide range of levels from the ad hoc to integrated maturity. Most organizations were assessed at the basic and higher level of maturity. This indicates that at the basic level, some required management processes exist for more critical items and that documentation is better than for those organizations at the ad hoc level. In the areas of procurement planning and solicitation planning, all organizations were assessed as either basic or structured. Four organizations were assessed as integrated for source selection, and one organization was assessed as integrated for contract administration. One organization was assessed as ad hoc in the area of solicitation, two in the area of source selection, and one in the area of contract administration. Seven organizations were assessed at the ad hoc level for contract closeout, showing an acknowledgement of established policies and benefits, but also showing that organization-wide policies may not exist or are not clear. Those organizations in the structured area indicate process areas that are fully established and mandated. The organizations in the integrated area find that they include their customers well and management understands responsibilities while performing well.



**Table 5. SMC Organization Code**

SMC	
Infrared Space Systems (PKI)	I
Military Satellite Communications Systems (PKJ)	J
Launch & Range Systems (PKK)	K
Space Logistics (PKL)	L
Satellite Control & Network (PKN)	N
Operational Contracting (PKO)	O
Global Positioning Systems (PKP)	P
Space Superiority Systems (PKS)	S
Space Development & Test (PKT)	T
Defense Weather Systems (PKW)	W

**Table 6. SMC Survey Item Responses for Procurement Planning, Solicitation Planning, and Solicitation**

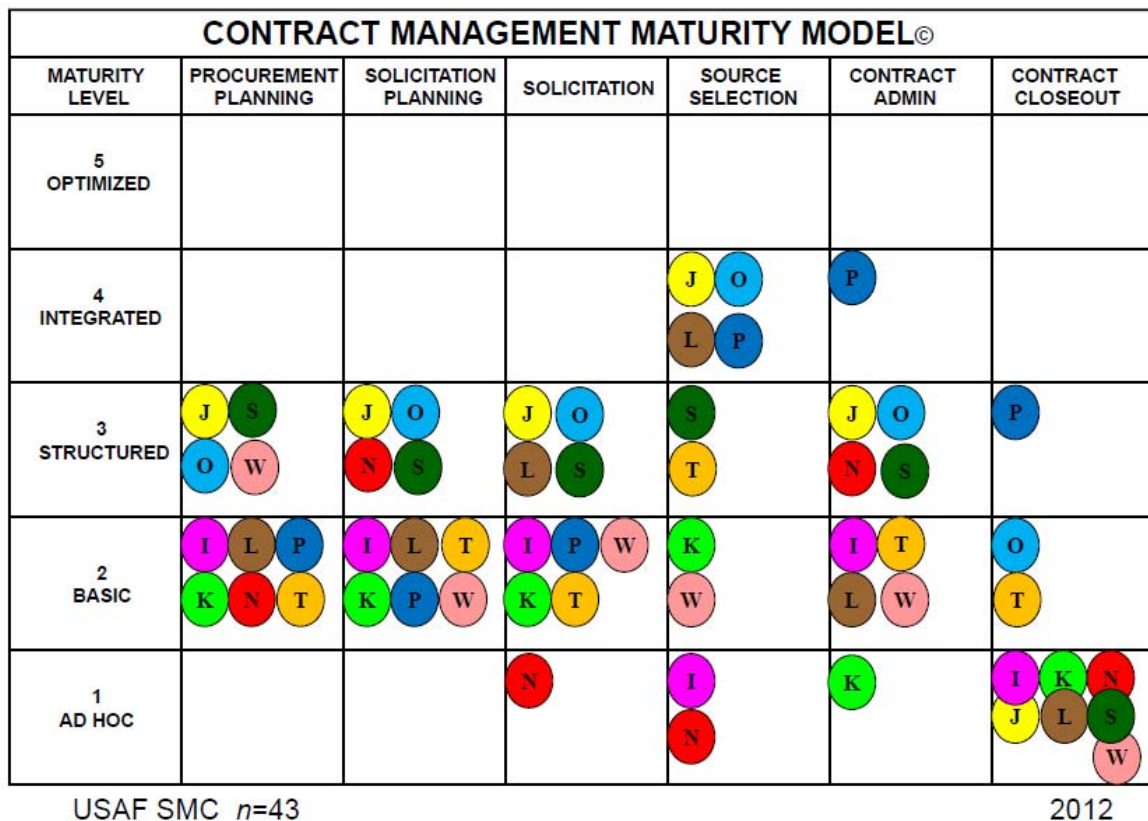
Key Process/Item Number/Description		SMC	I	J	K	L	N	O	P	S	T	W	
Procurement Planning		Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	n
1.1	Process Strength	4.03	3.20	4.80	3.67	4.50	2.33	4.75	3.67	4.33	3.75	3.50	58
1.2	Process Strength	3.62	3.40	4.20	1.83	3.75	2.33	4.13	3.33	4.17	4.13	3.50	58
1.3	Process Strength	3.34	3.20	4.10	2.00	3.75	2.00	3.88	3.00	3.83	3.13	3.50	58
1.4	Successful Results	3.66	3.60	4.50	3.17	4.00	4.00	3.63	3.33	3.33	3.25	3.50	58
1.5	Management Support	4.14	4.40	4.30	4.33	4.00	3.00	4.13	3.17	4.17	4.75	4.50	58
1.6	Process Integration	4.02	3.80	4.50	4.00	4.00	2.33	4.00	3.83	4.33	4.00	4.50	58
1.7	Process Integration	3.67	3.60	4.40	3.50	3.50	2.33	3.13	3.33	4.17	3.88	4.00	58
1.8	Process Integration	3.90	3.60	4.20	4.17	4.00	4.00	3.50	3.50	4.17	3.88	4.00	58
1.9	Process Measurement	2.41	3.00	1.90	1.83	1.75	1.33	3.25	2.17	3.33	2.38	3.00	58
1.10	Process Measurement	2.97	3.60	3.30	2.00	2.50	1.33	3.63	3.17	3.83	2.25	3.00	58
	<b>Total</b>	35.76	35.40	40.20	30.50	35.75	25.00	38.00	32.50	39.67	35.38	37.00	
<b>Solicitation Planning</b>													
2.1	Process Strength	3.96	3.00	4.13	3.50	4.33	4.00	4.71	3.20	4.50	4.13	2.00	49
2.2	Process Strength	3.59	2.75	4.00	2.67	4.33	4.00	4.29	3.00	4.33	3.38	2.00	49
2.3	Process Strength	3.84	2.75	4.25	3.33	4.33	4.00	4.29	3.60	4.17	3.88	2.00	49
2.4	Successful Results	3.78	3.25	4.25	3.50	2.67	4.00	4.29	3.40	4.17	3.63	4.00	49
2.5	Management Support	4.22	3.50	4.63	4.17	4.00	4.00	4.29	3.60	4.17	4.75	4.00	49
2.6	Process Integration	4.12	3.75	4.63	4.17	4.33	4.00	4.00	3.60	4.00	4.25	4.00	49
2.7	Process Integration	3.82	3.25	4.50	3.33	4.00	4.00	3.86	3.00	4.17	3.88	4.00	49
2.8	Process Integration	3.59	3.50	4.25	3.33	3.00	4.00	4.00	2.60	4.17	3.25	3.00	49
2.9	Process Measurement	2.65	2.50	3.25	2.17	2.00	4.00	3.29	2.20	3.17	1.88	3.00	49
2.10	Process Measurement	3.22	3.50	4.00	2.33	2.67	4.00	3.57	3.40	4.00	2.25	2.00	49
	<b>Total</b>	36.80	31.75	41.88	32.50	35.67	40.00	40.57	31.60	40.83	35.25	30.00	
<b>Solicitation</b>													
3.1	Process Strength	3.57	2.50	4.13	2.83	4.33	0.00	4.14	3.50	4.40	3.25	4.00	47
3.2	Process Strength	3.15	2.25	3.88	2.50	4.33	0.00	3.00	3.25	4.60	2.50	3.00	47
3.3	Process Strength	3.19	2.50	3.88	2.17	4.00	0.00	4.00	3.25	4.00	2.63	2.00	47
3.4	Successful Results	3.45	3.25	3.63	3.50	3.67	0.00	4.00	3.00	4.00	3.13	3.00	47
3.5	Management Support	3.66	3.50	3.38	3.50	3.67	0.00	4.00	3.75	4.40	3.75	4.00	47
3.6	Process Integration	3.77	3.75	3.75	3.17	4.00	0.00	4.14	3.75	4.20	4.00	4.00	47
3.7	Process Integration	3.51	3.25	3.88	3.17	3.67	0.00	3.29	3.25	4.40	3.63	4.00	47
3.8	Process Integration	3.57	3.50	3.75	2.83	3.33	0.00	3.86	3.75	4.40	3.63	4.00	47
3.9	Process Measurement	2.64	2.25	2.75	2.50	3.00	0.00	3.29	2.00	3.20	2.38	3.00	47
3.10	Process Measurement	3.06	3.25	3.50	2.50	2.67	0.00	3.43	3.25	4.00	2.38	4.00	47
	<b>Total</b>	33.57	30.00	36.50	28.67	36.67	0.00	37.14	32.75	41.60	31.25	35.00	



**Table 7. SMC Survey Item Responses for Source Selection, Contract Administration, and Contract Closeout**

Key Process/Item Number/Description		SMC	I	J	K	L	N	O	P	S	T	W	
		Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	n
<b>Source Selection</b>													
4.1	Process Strength	4.11	2.25	4.71	2.67	4.67	4.00	4.57	4.67	4.60	4.57	4.00	44
4.2	Process Strength	3.75	2.25	4.71	1.83	4.33	4.00	4.29	4.67	3.60	4.14	4.00	44
4.3	Process Strength	3.75	2.25	4.57	2.00	4.00	4.00	4.00	4.67	4.40	4.00	4.00	44
4.4	Successful Results	3.89	2.00	4.57	2.67	4.33	0.00	4.71	4.67	4.40	4.14	4.00	44
4.5	Management Support	4.05	2.25	4.71	2.83	4.33	4.00	4.57	5.00	4.40	4.29	3.00	44
4.6	Successful Results	3.66	2.50	4.14	2.83	4.00	5.00	4.29	4.67	2.80	3.86	3.00	44
4.7	Successful Results	4.05	2.25	4.71	3.50	4.67	0.00	4.14	5.00	4.60	4.43	3.00	44
4.8	Process Integration	4.07	2.25	4.57	3.50	4.67	0.00	4.57	5.00	4.20	4.43	4.00	44
4.9	Process Integration	3.93	3.00	4.71	2.67	4.33	0.00	4.14	5.00	4.40	4.14	4.00	44
4.10	Process Measurement	2.75	1.75	2.86	1.50	4.00	0.00	3.71	2.67	3.40	2.71	3.00	44
4.11	Process Measurement	3.27	2.25	4.29	2.17	3.33	0.00	3.71	4.33	4.20	2.71	3.00	44
<b>Total</b>		41.27	25.00	48.57	28.17	46.67	21.00	46.71	50.33	45.00	43.43	39.00	
<b>Contract Administration</b>													
5.1	Process Strength	3.91	3.67	4.43	2.00	3.67	4.00	4.29	5.00	4.00	4.29	4.00	43
5.2	Process Strength	3.81	3.33	4.29	2.33	4.33	4.00	4.00	4.67	4.00	3.86	4.00	43
5.3	Process Strength	3.58	3.00	4.14	1.67	3.33	4.00	4.00	4.33	4.00	4.00	3.00	43
5.4	Successful Results	3.51	2.67	4.00	1.67	3.00	4.00	4.14	4.00	4.00	3.86	4.00	43
5.5	Management Support	3.65	3.33	4.00	2.17	3.00	4.00	3.71	4.33	4.40	4.14	3.00	43
5.6	Process Integration	3.86	3.33	4.43	3.17	3.33	4.00	4.00	4.33	4.00	4.00	3.00	43
5.7	Process Integration	3.72	3.33	4.43	2.67	2.67	4.00	3.71	4.33	4.00	4.14	3.00	43
5.8	Process Integration	3.65	4.33	4.29	2.67	2.67	4.00	3.57	4.33	4.00	3.57	3.00	43
5.9	Process Integration	3.88	4.67	4.43	3.17	4.33	4.00	2.86	4.67	4.20	4.00	3.00	43
5.10	Process Measurement	2.84	3.00	3.71	1.83	2.33	4.00	3.57	2.67	3.20	2.00	2.00	43
5.11	Process Measurement	3.21	3.33	3.86	1.83	2.33	4.00	3.57	4.33	4.20	2.57	2.00	43
<b>Total</b>		39.63	38.00	46.00	25.17	35.00	44.00	41.43	47.00	44.00	40.43	34.00	
<b>Contract Closeout</b>													
6.1	Process Strength	2.88	2.00	2.43	1.50	2.67	4.00	3.86	4.33	3.20	3.14	2.00	43
6.2	Process Strength	2.63	2.00	2.43	1.50	2.33	4.00	3.86	4.33	2.20	2.43	2.00	43
6.3	Process Strength	2.63	2.00	2.00	1.33	2.67	0.00	3.71	4.33	2.40	3.43	2.00	43
6.4	Successful Results	3.12	2.33	2.43	2.00	2.33	0.00	4.57	5.00	2.40	4.29	2.00	43
6.5	Management Support	2.47	2.00	1.86	1.67	1.67	0.00	3.43	4.33	2.40	3.00	2.00	43
6.6	Process Integration	2.58	2.33	2.14	1.83	1.67	0.00	3.43	4.33	2.40	3.14	2.00	43
6.7	Process Integration	2.47	2.00	2.14	1.50	1.67	0.00	3.29	4.33	2.20	3.14	2.00	43
6.8	Process Measurement	2.07	1.67	1.57	1.33	1.67	0.00	2.86	2.67	2.20	2.71	2.00	43
6.9	Process Measurement	2.19	2.00	1.71	1.17	1.67	0.00	3.00	4.33	2.40	2.29	2.00	43
6.10	Process Measurement	1.98	1.67	1.57	1.17	1.67	0.00	3.14	4.33	2.20	1.29	2.00	43
<b>Total</b>		25.00	20	20.29	15.00	20.00	8.00	35.14	42.33	24.00	28.86	20.00	





**Figure 6. Contract Management Maturity Model Summary for SMC Organizations**

## 2. Contract Management Maturity of the Entire SMC

The results of the CMMM survey shown in Table 8 represent the maturity level for each contract management process phase for the SMC. The SMC is mostly at the basic maturity level, showing that some contract management processes are in place, but are mostly required for more critical items. SMC results revealed higher maturity levels for both solicitation planning and source selection, yielding a structured level of maturity indicating fully established and mandated processes.

An organization is described at the basic level when “some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as



contracts meeting certain dollar thresholds, or contracts with certain customers” (Garrett & Rendon, 2005a, p. 53). Moreover, these processes and standards are not organization wide, and, therefore, there are no organizational policies requiring the consistent use of these processes other than those required (Garrett & Rendon, 2005a, p. 53). As a basic-level organization is more mature than an ad hoc-level organization, there are some official documentation procedures for the organization’s contract management process (Garrett & Rendon, 2005a, p. 53).

Garrett and Rendon (2005a) explained the structured level as an organization that has completely established its contract management processes and has mandated them throughout the organization (p. 53). In addition, senior executives are involved in providing guidance and decision-making (Garrett & Rendon, 2005a, p. 53).

**Table 8. SMC Contract Management Maturity Levels**

<b>Contract Management Process</b>	<b>Maturity Level</b>
Procurement Planning	<i>Basic</i>
Solicitation Planning	<i>Structured</i>
Solicitation	<i>Basic</i>
Source Selection	<i>Structured</i>
Contract Administration	<i>Basic</i>
Contract Closeout	<i>Basic</i>

## **E. RESULTS OF THE CMMAT AT THE AFLCMC-WP**

### **1. Contract Management Maturity of AFLCMC-WP Organizations**

In the AFLCMC, a total of 70 surveys were completed. There were a total of 350 eligible contracting officials yielding a response rate of 20%, as shown in Table 9. Table 10 codes the letter to each organization at the AFLCMC that participated in the survey. Table 11 and Table 12 provide the organization survey-response means to include the AFLCMC as a whole. Figure 7 is a graphical representation of the maturity levels for each contracting organization at the AFLCMC. The graphical representation for each organization is first derived from the survey-response mean. Each organization’s survey-response mean is then applied to the 10- or 11-question conversion table (Table 3) for each key contracting process area. The mean then represents the level of maturity for each organization at each key contracting process area.



**Table 9. AFLCMC Survey Response Rate**

Organization	Eligible Responses	Completed Responses	Response Rate
AFLCMC	350	70	20%

AFLCMC organizational results revealed a wide range of levels from ad hoc to integrated maturity. Most organizations were assessed at the basic and structured level of maturity. This indicates that at the basic level, some required management processes exist for more critical items and that documentation is better than those organizations at the ad hoc level. At the structured level, an organization has completely established its contract management processes and has mandated them throughout the organization. One organization was assessed as integrated in the area of procurement planning, one in the area of solicitation planning, two in the area of source selection, and one in the area of contract administration. Two organizations were found in the ad hoc level for contract closeout, showing an acknowledgement of established policies and benefits, but also showing that organization-wide policies may not exist or are not clear.

**Table 10. AFLCMC Organization Code**

AFLCMC	Code
Agile Combat Support Directorate (WNK)	N
Enterprise Acquisition Division (PKE)	E
Fighters and Bombers Directorate (WWK)	W
ISR Directorate (WIK)	I
Tanker Modernization Directorate (WKK)	K
Mobility Directorate (WLK)	L
Operational Contracting Division (PKO)	O



**Table 11. AFLCMC Survey Item Responses for Procurement Planning,  
Solicitation Planning, and Solicitation**

Key Process/Item Number/Description		AFLCMC	N	E	W	I	K	L	O	
	Procurement Planning	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	n
1.1	Process Strength	4.13	3.92	3.83	4.26	4.29	4.60	4.20	3.88	93
1.2	Process Strength	3.68	3.38	3.33	3.56	4.00	4.60	4.10	3.63	93
1.3	Process Strength	3.61	3.08	3.50	3.63	4.07	4.20	4.00	3.50	93
1.4	Successful Results	3.68	3.63	3.50	3.74	3.71	3.80	4.00	3.25	93
1.5	Management Support	4.40	4.00	4.00	4.70	4.71	5.00	4.60	3.75	93
1.6	Process Integration	4.06	3.75	3.67	4.30	4.29	4.80	4.30	3.38	93
1.7	Process Integration	3.90	3.75	3.33	4.19	4.21	4.60	3.60	3.25	93
1.8	Process Integration	4.06	3.92	3.33	4.26	4.21	4.60	4.10	3.75	93
1.9	Process Measurement	2.94	2.79	2.83	2.74	3.50	3.40	2.60	3.25	93
1.10	Process Measurement	3.43	2.88	3.50	3.37	3.79	4.80	3.60	3.50	93
	<b>Total</b>	37.89	35.08	34.83	38.74	40.79	44.40	39.10	35.13	
	<b>Solicitation Planning</b>									
2.1	Process Strength	4.11	3.86	4.75	4.09	4.29	4.75	4.11	3.86	80
2.2	Process Strength	3.70	3.43	4.00	3.68	4.14	3.25	3.78	3.71	80
2.3	Process Strength	3.89	3.76	4.25	3.95	4.14	4.25	3.67	3.43	80
2.4	Successful Results	3.96	4.05	4.25	3.86	3.79	4.75	4.11	3.57	80
2.5	Management Support	4.20	4.14	4.50	4.41	3.86	4.75	4.44	3.57	80
2.6	Process Integration	4.14	4.05	4.00	4.18	4.14	5.00	4.22	3.71	80
2.7	Process Integration	3.98	3.71	3.75	4.18	4.14	4.75	4.11	3.29	80
2.8	Process Integration	3.35	2.86	4.00	3.45	3.29	4.75	3.44	3.29	80
2.9	Process Measurement	2.94	3.05	3.50	2.91	2.57	3.50	2.78	3.00	80
2.10	Process Measurement	3.41	2.67	4.00	3.68	3.36	4.75	3.89	3.14	80
	<b>Total</b>	37.67	35.57	41.00	38.41	37.71	44.50	38.56	34.57	
	<b>Solicitation</b>									
3.1	Process Strength	3.65	3.62	4.75	3.33	3.92	4.50	3.50	3.29	76
3.2	Process Strength	3.48	3.52	4.50	2.95	3.92	4.00	3.63	3.14	76
3.3	Process Strength	3.34	3.43	4.25	2.76	3.83	3.25	3.63	3.14	76
3.4	Successful Results	3.62	3.62	4.00	3.48	3.75	4.25	3.38	3.57	76
3.5	Management Support	3.99	4.05	4.50	3.86	3.67	4.75	4.38	3.57	76
3.6	Process Integration	3.82	3.95	4.00	3.67	3.83	4.75	3.88	3.14	76
3.7	Process Integration	3.79	3.81	4.00	3.76	3.75	4.75	3.75	3.29	76
3.8	Process Integration	3.25	3.38	3.50	3.05	3.33	3.25	3.38	3.00	76
3.9	Process Measurement	2.88	2.86	3.50	2.81	2.92	3.25	2.63	2.86	76
3.10	Process Measurement	3.34	2.95	4.25	3.24	3.25	4.75	3.75	3.14	76
	<b>Total</b>	35.16	35.19	41.25	32.90	36.17	41.50	35.88	32.14	



**Table 12. AFLCMC Survey Item Responses for Source Selection, Contract Administration, and Contract Closeout**

Key Process/Item Number/Description		AFLCMC	N	E	W	I	K	L	O	
	Source Selection	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	n
4.1	Process Strength	4.01	4.15	4.50	4.14	4.27	4.75	3.13	3.14	74
4.2	Process Strength	3.76	3.95	4.25	3.67	4.18	4.75	2.88	3.00	74
4.3	Process Strength	3.76	4.10	4.25	3.57	4.00	4.75	3.00	3.00	74
4.4	Successful Results	3.92	4.20	4.00	4.14	4.09	4.75	2.75	3.00	74
4.5	Management Support	4.00	4.35	4.25	4.00	4.09	5.00	3.13	3.14	74
4.6	Successful Results	3.75	3.80	4.25	3.86	4.09	4.75	2.75	3.00	74
4.7	Successful Results	3.91	4.10	4.50	3.95	4.27	4.75	2.88	3.00	74
4.8	Process Integration	3.79	4.10	4.25	3.67	3.91	4.75	3.00	3.14	74
4.9	Process Integration	3.84	4.20	4.25	3.95	3.73	4.75	3.00	2.86	74
4.10	Process Measurement	2.97	3.05	3.75	2.81	3.55	3.50	2.25	2.43	74
4.11	Process Measurement	3.27	3.10	4.25	3.19	3.73	4.75	2.63	2.57	74
	<b>Total</b>	40.97	43.10	46.50	40.95	43.91	51.25	31.38	32.29	
	<b>Contract Administration</b>									
5.1	Process Strength	3.99	4.00	4.00	4.10	4.10	4.50	3.63	3.57	72
5.2	Process Strength	3.70	3.45	4.00	3.75	4.20	4.25	3.25	3.57	72
5.3	Process Strength	3.68	3.25	4.25	3.80	4.20	4.50	3.25	3.57	72
5.4	Successful Results	3.68	3.50	4.75	3.75	3.60	4.75	3.13	3.57	72
5.5	Management Support	3.70	3.30	4.00	4.00	3.50	4.75	3.75	3.43	72
5.6	Process Integration	3.90	3.95	4.00	3.85	4.00	4.50	4.00	3.29	72
5.7	Process Integration	4.00	3.95	3.75	4.20	4.20	4.75	3.63	3.43	72
5.8	Process Integration	3.84	3.60	4.00	4.05	4.00	4.75	3.75	3.14	72
5.9	Process Integration	3.53	3.10	2.25	3.90	4.10	3.75	4.25	2.71	72
5.10	Process Measurement	3.19	2.90	3.75	3.35	3.70	3.50	2.63	3.00	72
5.11	Process Measurement	3.47	3.00	4.50	3.55	3.60	4.50	3.50	3.14	72
	<b>Total</b>	40.68	38.00	43.25	42.30	43.20	48.50	38.75	36.43	
	<b>Contract Closeout</b>									
6.1	Process Strength	2.68	1.79	4.50	2.75	3.10	2.25	2.38	4.00	70
6.2	Process Strength	2.61	1.79	4.75	2.80	3.10	2.00	2.13	3.33	70
6.3	Process Strength	2.70	1.74	5.00	2.80	3.00	2.25	2.63	3.83	70
6.4	Successful Results	3.24	2.21	5.00	3.45	3.20	3.25	3.50	4.33	70
6.5	Management Support	2.42	1.16	3.50	2.85	2.90	3.00	2.50	3.00	70
6.6	Process Integration	2.48	1.32	3.00	2.95	3.00	2.00	3.00	3.00	70
6.7	Process Integration	2.51	1.53	3.75	2.70	3.00	1.75	2.88	3.33	70
6.8	Process Measurement	2.04	1.11	3.00	1.90	2.70	2.00	2.50	3.17	70
6.9	Process Measurement	2.13	1.21	4.00	2.15	2.40	1.75	2.38	3.17	70
6.10	Process Measurement	2.03	1.11	3.25	1.95	2.80	2.25	2.38	2.50	70
	<b>Total</b>	24.83	14.95	39.75	26.30	29.20	22.50	26.25	33.67	



CONTRACT MANAGEMENT MATURITY MODEL <sup>©</sup>						
MATURITY LEVEL	PROCUREMENT PLANNING	SOLICITATION PLANNING	SOLICITATION	SOURCE SELECTION	CONTRACT ADMIN	CONTRACT CLOSEOUT
5 OPTIMIZED						
4 INTEGRATED	K	K		E K	K	
3 STRUCTURED	W L I	E I W L	E K	N I W	E I W	E
2 BASIC	N O E	N O	N I O W L	L O	N O L	W L I O
1 AD HOC						N K

USAF AFLCMC n=70

2012

**Figure 7. Contract Management Maturity Model Summary for AFLCMC Organizations**

## 2. Contract Management Maturity of the Entire AFLCMC–WP

The results of the CMMM survey shown in Table 13 represent the maturity level during each contract management process phase for the AFLCMC. The AFLCMC is described as mostly structured. The AFLCMC also showed basic maturity level at the solicitation and closeout phase, showing that some contract management processes are in place, but are mostly required for more critical items.

Garrett and Rendon (2005a) explained the structured level as an organization that has completely established its contract management processes and has mandated them throughout the organization (p. 53). In addition, senior executives are involved in providing guidance and decision-making (Garrett & Rendon, 2005a, p. 53). Furthermore,



“the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract, such as contract strategy, contract type, terms and conditions, dollar value and type of requirement” (Garrett & Rendon, 2005a, p. 53). The organization is also formally documenting its contract management process and is beginning to automate some of it as well (Garrett & Rendon, 2005a, p. 53).

An organization is described at the basic level when “some basic contract management processes and standards have been established within the organization, but are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers” (Garrett & Rendon, 2005a, p. 53).

**Table 13. AFLCMC Contract Management Maturity Levels**

<b>Contract Management Process</b>	<b>Maturity Level</b>
Procurement Planning	<i>Structured</i>
Solicitation Planning	<i>Structured</i>
Solicitation	<i>Basic</i>
Source Selection	<i>Structured</i>
Contract Administration	<i>Structured</i>
Contract Closeout	<i>Basic</i>

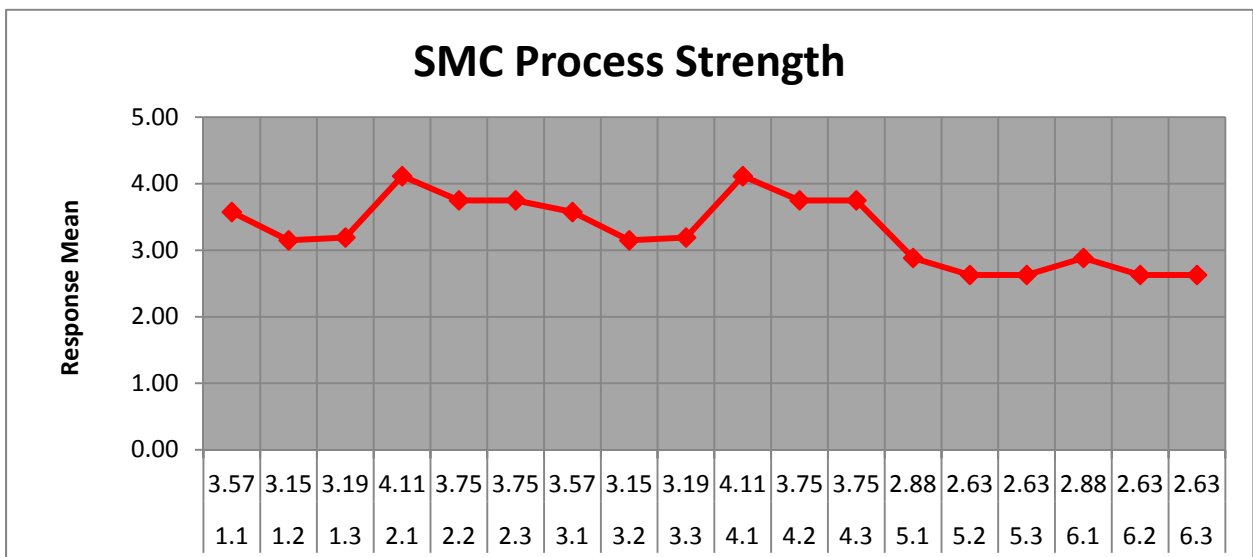
#### **F. PROCESS ENABLERS AT THE SMC**

As shown in Table 6 and Table 7, each survey question is related to a best practice process enabler. These process enablers are broken into the following groups: Process Strength, Successful Outcomes, Management Support, Process Integrations, and Process Measurement. For each contract management process, a few items are designated as an enabler. An example is the first three survey questions in the procurement planning phase. These three questions are linked to Process Strength, as are the first three in the solicitation planning phase, solicitation, and so on. In analyzing the data, consistencies can be found in the relationship between contract management key processes and best practice groups. The higher and lower scoring means provide a way of determining some best practices within the six key process areas.



## 1. SMC Process Strength

In Figure 8, we see consistently higher survey-response means in Process Strength in regards to having established processes (1.1, 2.1, 3.1, 4.1, and 5.1). These means are higher than those of the Process Strength involving standardized, mandatory, and documented processes (Items 1.2, 1.3, 2.2, 2.3, 3.2, 3.3, 4.2, 4.3, 5.2, 5.3, 6.2, and 6.3). This indicates a weaker use of those Process Strength best practices (standardized, mandatory, and documented processes) than those of Process Strength best practices of establishing processes across all six contract management key process areas. The SMC shows its highest levels of Process Strength in the areas of solicitation planning (2.1) and source selection (4.1). The SMC shows a steady decline of Process Strength in the areas of contract administration and contract closeout (5.1, 5.2, 5.3, 6.1, 6.2, 6.3).



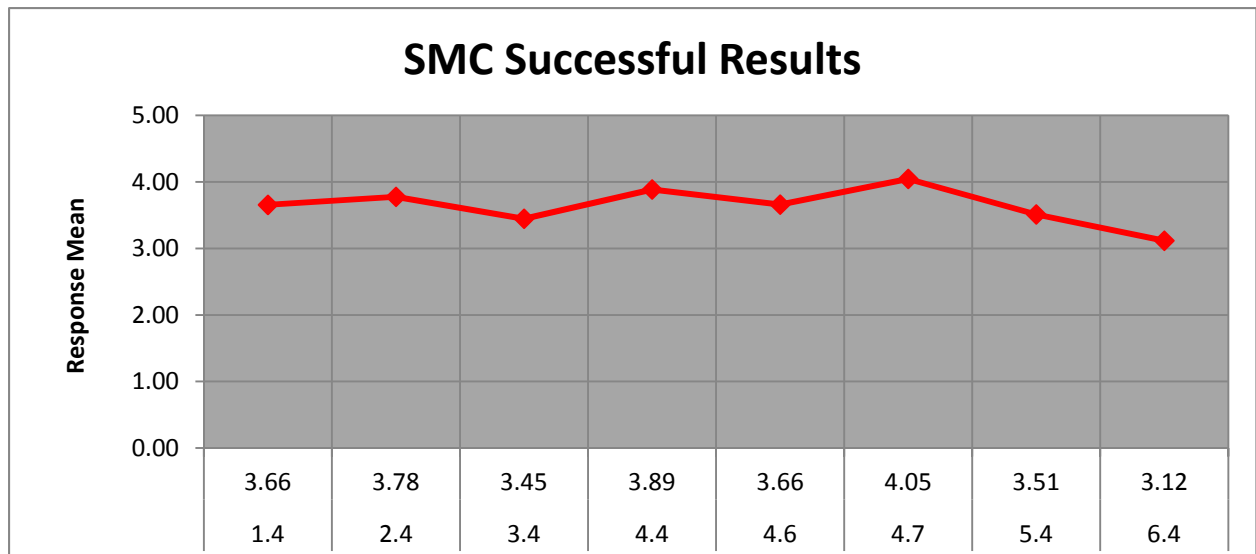
**Figure 8. Process Strength**

## 2. Successful Results

In Figure 9, Successful Results best practices show that structuring solicitations to facilitate accurate and complete proposals, using appropriate evaluation criteria, and evaluating past performance and technical capability in contractor proposal evaluation (Items 2.4, 4.4, and 4.7) were higher in survey-response means than the best practices of documenting acquisition plans, accurate and complete proposals, use of independent



government cost estimates, accurate and timely contractor payments, controlled contract changes, and verifying final delivery and final payment (Items 1.4, 3.4, 4.6, 5.4, and 6.4). This indicates higher use of Successful Results best practices in solicitation planning and source selection. The lower use of Successful Results best practices were distributed across the remaining contract management key process areas.



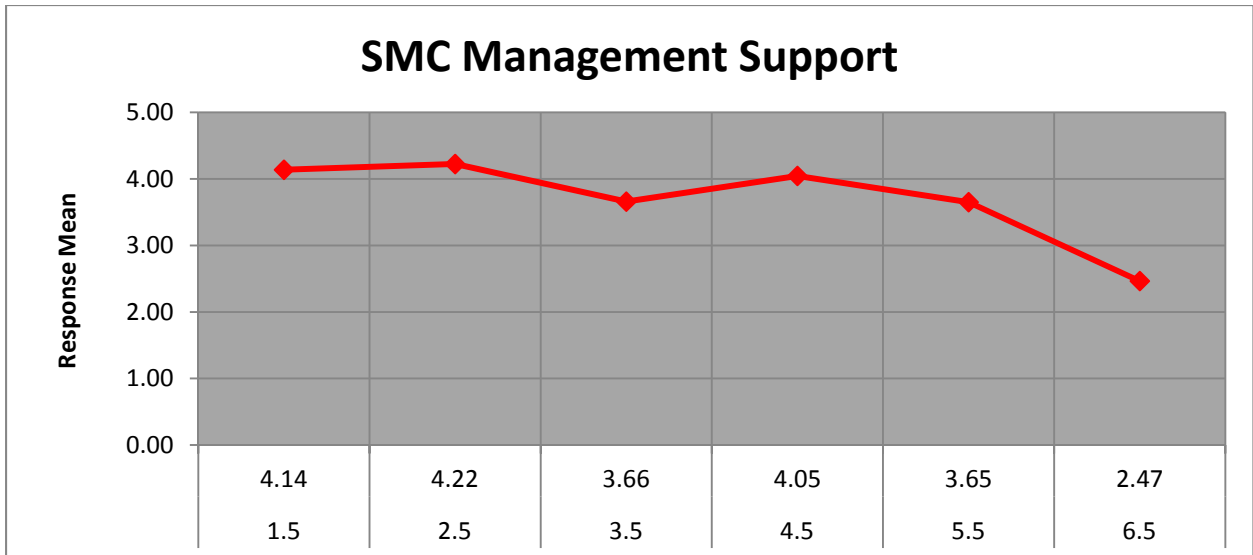
**Figure 9. Successful Results**

### **3. Management Support**

In Figure 10, there are relatively higher survey-response means with higher levels of Management Support specifically for senior-management involvement in providing input and approval of key planning decisions and documents for the areas of procurement planning, solicitation planning, and source selection (Items 1.5, 2.5, and 4.5). On the other hand, the lower response means for Management Support in the solicitation, contract administration, and contract closeout areas of the contract management key process areas are evident (Items 3.5, 5.5, and 6.5).

The Management Support best practices are at a higher level for the procurement planning, solicitation planning, and source selection key process areas than for the remaining process areas.





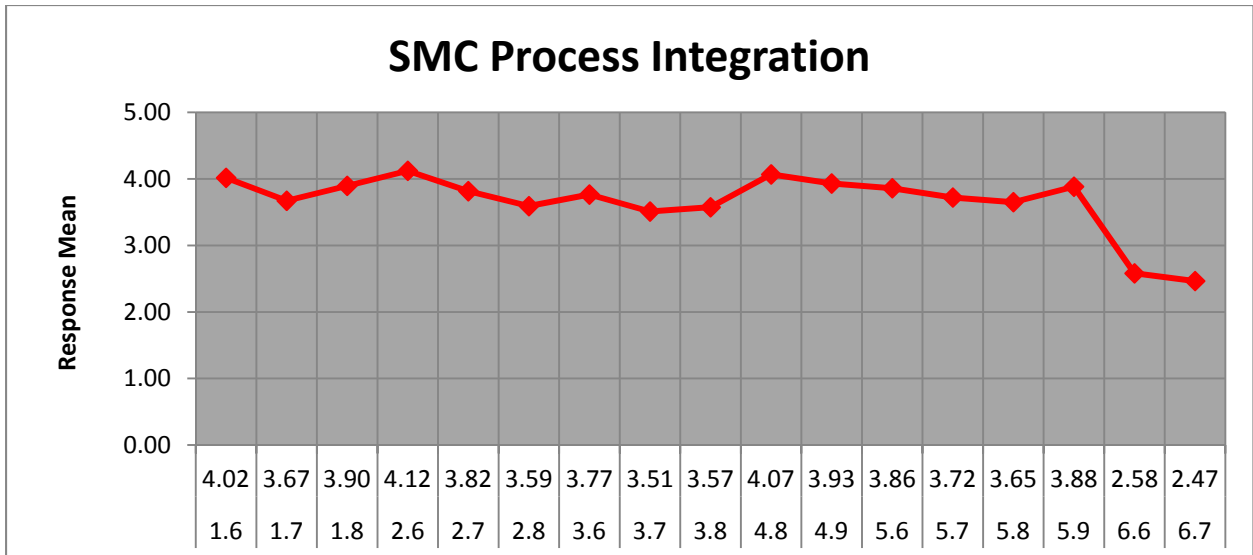
**Figure 10. SMC Management Support**

#### **4. Process Integration**

In Figure 11, we see consistently higher survey-response means, indicating higher levels of Process Integration in regards to the use of cross-functional teams in procurement planning, solicitation planning, source selection, and contract administration (Items 1.6, 2.6, 4.8, and 5.9). This indicates a stronger use of Process Integration best practices in the contract management key process area of procurement planning, solicitation planning, source selection, and contract administration including representatives from other functional areas of the program.

The solicitation and contract closeout key process areas showed relatively lower levels of Process Integration best practices (Item 3.7, 3.8, 6.6, and 6.7). This represents less use of Process Integration best practices (industry inputs and integrated project teams).





**Figure 11. SMC Process Integration**

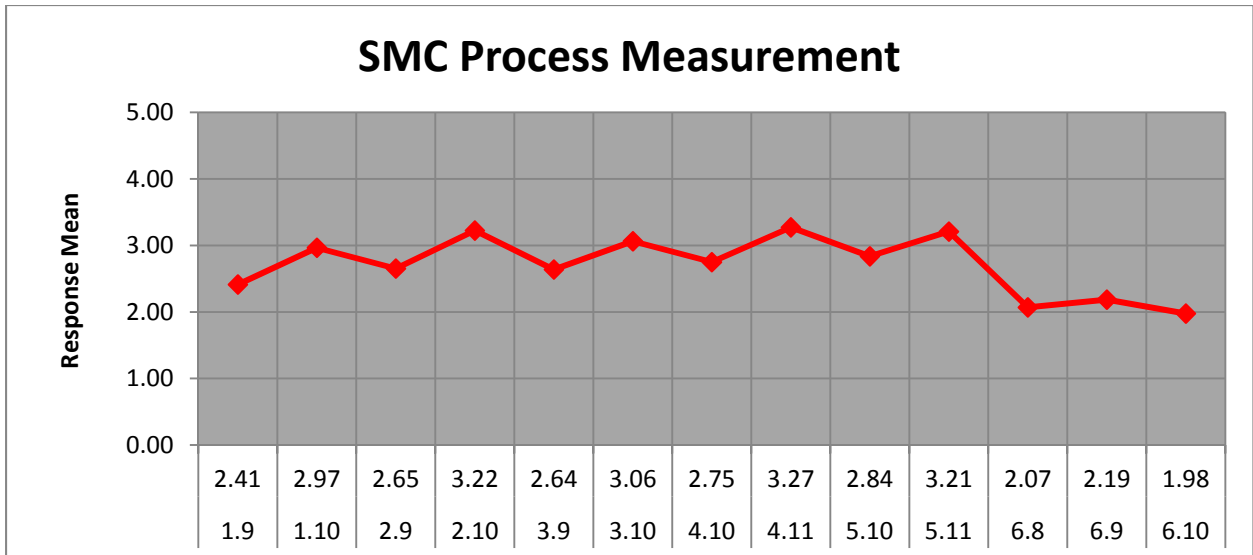
## 5. Process Measurement

In Figure 12, the higher level use of Process Measurement best practices is seen in survey-response means for continued process improvements (2.10, 3.10, 4.11, and 5.11). This is apparent in the solicitation planning, solicitation, source selection, and contract administration key process areas.

When it came to using Process Measurement best practices of using efficiency and effectiveness metrics in process evaluation (Items 1.9, 2.9, 3.9, 4.10, 5.10 and 6.8), there was evidence of lower levels. In terms of process improvement and maintaining a database, lower levels were also evident in the contract closeout key area (Items 6.9 and 6.10).

Overall survey-response means for the Process Measurement best practice group were lower than all other phases, indicating weaker levels of Process Measurement best practices.





**Figure 12. SMC Process Integration**

## **G. KEY ENABLERS AT THE AFLCMC–WP**

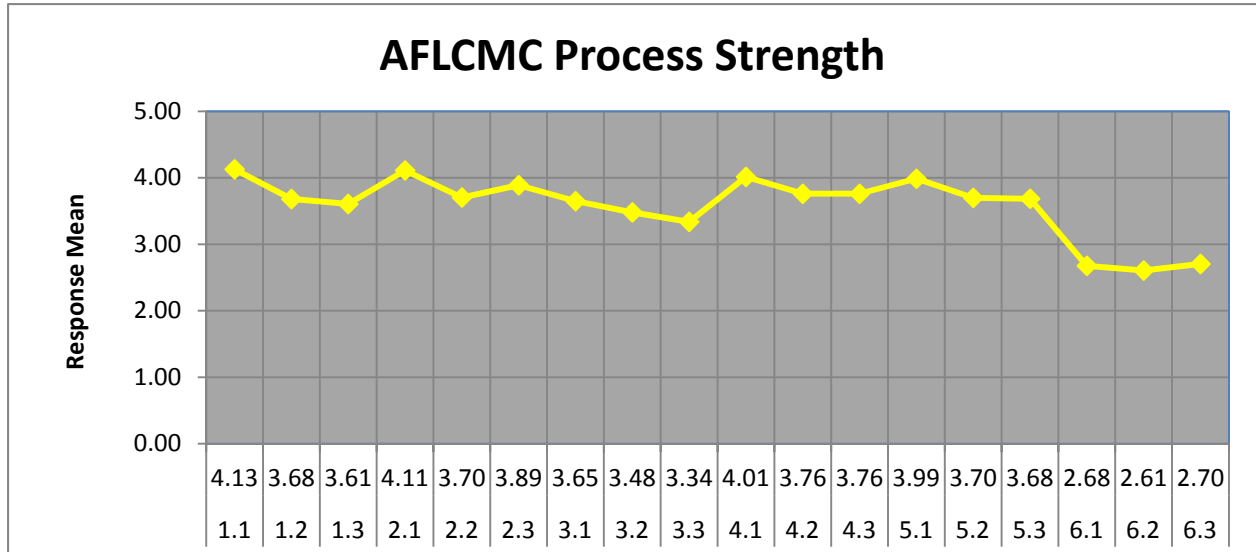
As shown in Table 11 and Table 12, each survey question was related to a best practice key enabler. These key enablers are broken into the following groups: Process Strength, Successful Outcomes, Management Support, Process Integration, and Process Measurement. For each contract management process, a few items are designated as an enabler. An example is the first three survey questions in the procurement planning phase. These three questions are linked to Process Strength, as are the first three in the solicitation planning phase, solicitation, and so on. In analyzing the data, consistencies can be found in the relationship between contract management key processes and best practice groups. The higher and lower scoring means provide a way of determining some best practices within the six key process areas.

### **1. Process Strength**

In Figure 13, we see consistently higher survey-response means in Process Strength in regards to having established processes (1.1, 2.1, 4.1, and 5.1). These means are higher than those of the Process Strength involving standardized, mandatory, and documented processes (Items 1.2, 1.3, 2.2, 2.3, 3.2, 3.3, 4.2, 4.3, 5.2, 5.3, 6.2, and 6.3). This indicates a weaker use of those Process Strength best practices (standardized,



mandatory, and documented processes) than those of Process Strength best practices of establishing processes across all six contract management key process areas. The AFLCMC shows its highest Process Strength in the areas of procurement planning, source selection, and contract administration (2.1, 4.1, 5.1). The AFLCMC has a decline in Process Strength in the area of contract closeout (6.1, 6.2, 6.3).

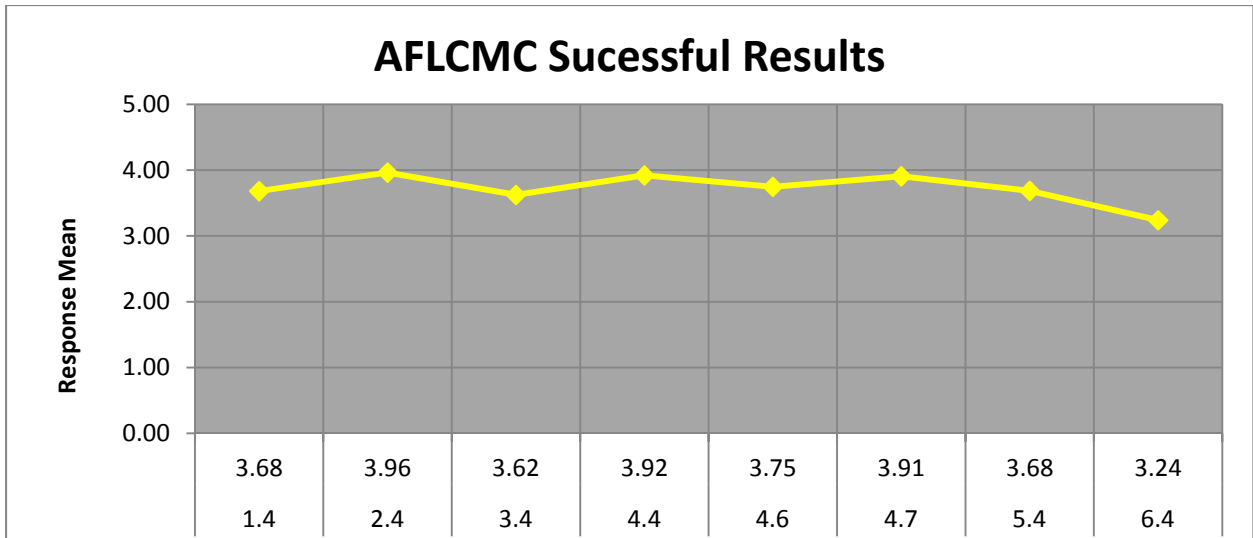


**Figure 13. AFLCMC Process Strength**

## 2. Successful Results

In Figure 14, Successful Results best practices show that structuring solicitations to facilitate accurate and complete proposals, using appropriate evaluation criteria, and evaluating past performance and technical capability in contractor proposal evaluation (Items 2.4, 4.4, and 4.7) were higher in survey-response means than the best practices of documenting acquisition plans, accurate and complete proposals, use of independent government cost estimates, accurate and timely contractor payments, controlled contract changes, and verifying final delivery and final payment (Items 1.4, 3.4, 4.6, 5.4, and 6.4). This indicates higher use of Successful Results best practices in solicitation planning and source selection. The lower use of Successful Results best practices were distributed across the remaining contract management key process areas.





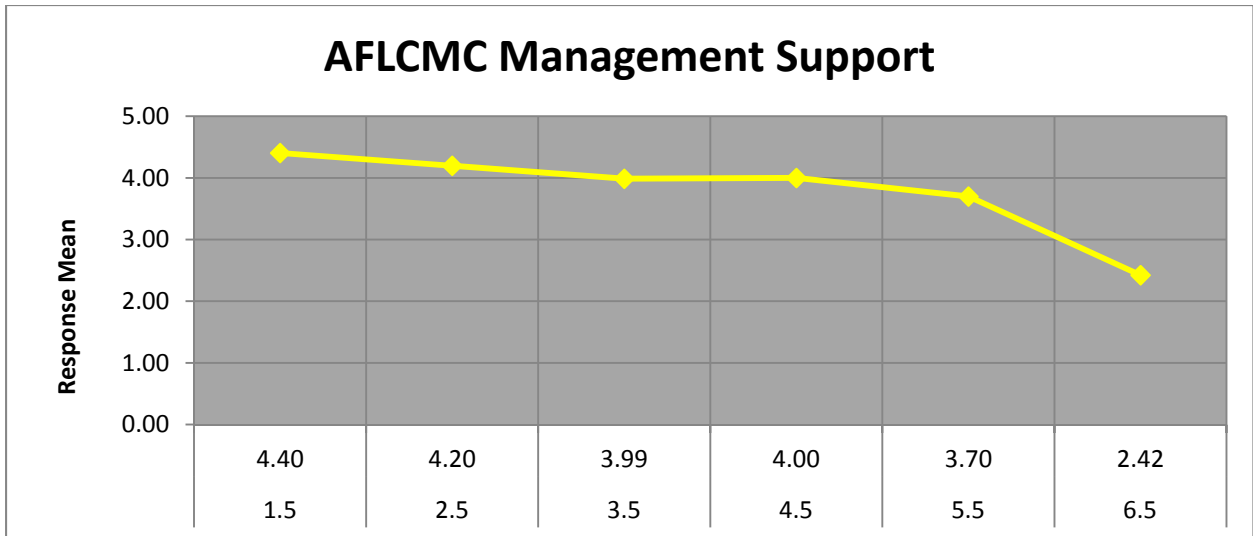
**Figure 14. AFLCMC Sucessful Results**

### **3. Management Support**

In Figure 15, there are relatively higher survey-response means with higher levels of Management Support specifically involving senior-management involvement in providing input and approval of key planning decisions and documents (Items 1.5, 2.5, 3.5, and 4.5). On the other hand, lower response means are evident for Management Support in the contract administration and contract closeout areas of the contract management key process areas (Items 5.5 and 6.5).

The Management Support best practices are at a higher level for the procurement planning, solicitation planning, solicitation, and source selection key process areas than for the remaining process areas.





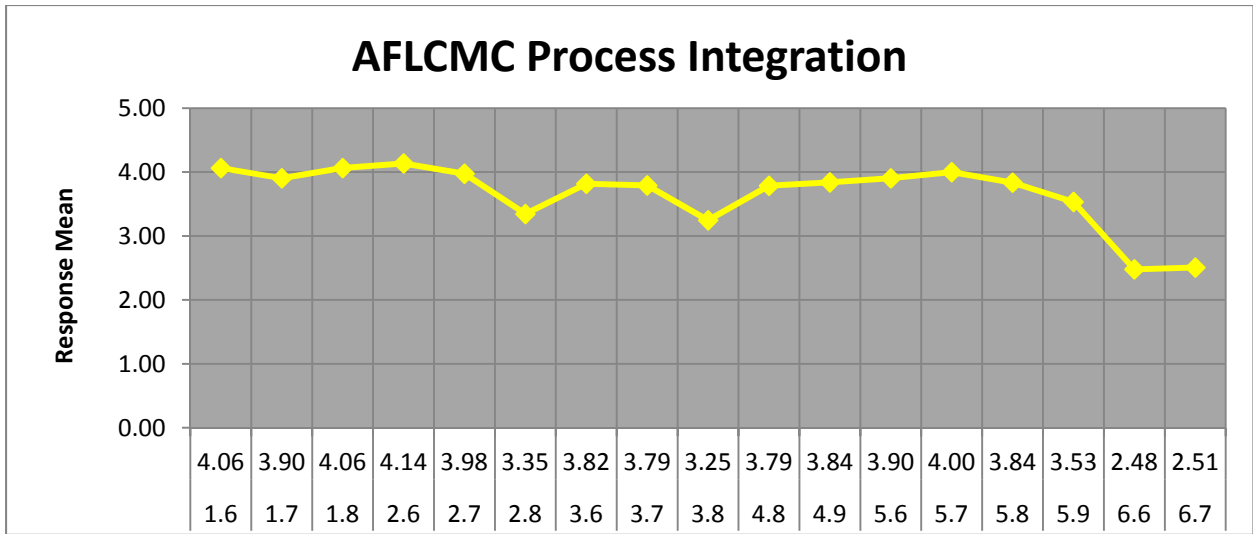
**Figure 15. AFLCMC Management Support**

#### **4. Process Integration**

In Figure 16, we see consistently higher survey-response means, indicating higher levels of Process Integration best practices in regards to the use of cross-functional teams in procurement planning and solicitation planning (Items 1.6 and 2.6). A higher survey-response mean shows integrated assessments of contract type selection, risk management, and contract terms and conditions at a higher level (Item 1.8). This indicates a stronger use of Process Integration best practices in the contract management key process areas of procurement planning and solicitation planning, including representatives from other functional areas of the program.

The solicitation and contract closeout key process areas showed relatively lower levels of Process Integration best practices (Items 2.8, 3.8, 6.6, and 6.7). This represents less use of Process Integration best practices (industry inputs and integrated project teams).





**Figure 16. AFLCMC Management Support**

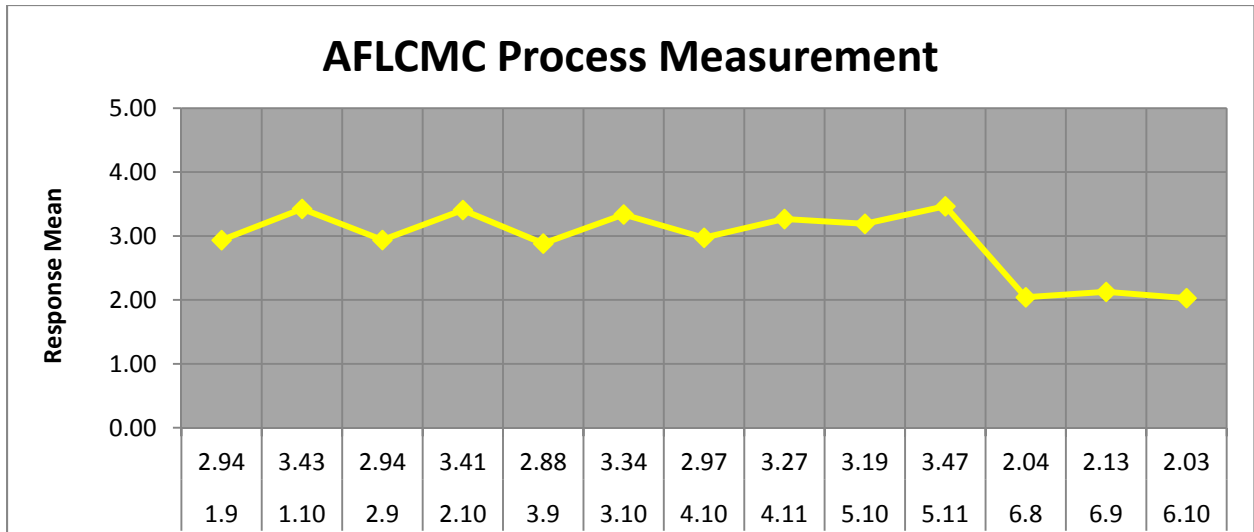
## 5. Process Measurement

In Figure 17, the higher level use of Process Measurement best practices is seen in survey-response means for continued process improvements (Items 2.10, 3.10, 4.11, and 5.11). This is apparent in the solicitation planning, solicitation, source selection, and contract administration key process areas.

When it came to Process Measurement best practices of using efficiency and effectiveness metrics in process evaluation (Items 1.9, 2.9, 3.9, 4.10, and 6.8), the results showed lower levels of use. In terms of process improvement and maintaining a database, common lower levels were also evident in the contract closeout key area (Items 6.9 and 6.10).

Overall survey-response means for the Process Measurement best practice group were lower than for all other contract management process key areas, indicating weaker levels of Process Measurement best practices in general.





**Figure 17. AFLCMC Management Support**

## **H. RECOMMENDATIONS FOR CONTRACT MANAGEMENT PROCESS IMPROVEMENT AT THE SMC**

In this section, we discuss recommendations for the individual key contract management process areas for the SMC organization as a whole. These recommendations offer process improvement ideas in order to reach the next level of maturity.

### **1. Procurement Planning**

The SMC organization-wide maturity level for procurement planning was determined to be basic (Level 2). This result was based on the overall survey-response means of the 10 SMC organizations surveyed, leading to the lowest level indicated. In order for the SMC to take steps towards the next higher level of maturity and achieve a rating of structured, procurement planning processes and standards should be fully established, institutionalized, and mandated throughout the SMC. Formal documentation must be developed for procurement planning processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting, decisions, related contract terms and conditions, and procurement planning documents (Garrett & Rendon, 2005a). Process improvement areas should include and focus on procurement planning activities such as market research (FAR parts 5 and 10),



acquisition planning (FAR part 7), stakeholder analysis, and requirements analysis (FAR part 11; Garrett & Rendon, 2005a).

The SMC should use the best practices and knowledge of the higher maturity level organizations within the SMC. The organizations that the SMC should leverage are PKJ, PKO, PKS, and PKW, as shown in Figure 1. The SMC should incorporate knowledge sharing and a database of best practices and lessons learned in order to improve the procurement planning maturity level to structured. In addition, providing and committing resources to training will improve the maturity level. The training should be developed to cover subjects such as funds availability, preliminary cost and schedule estimates, quality management plans, cash flow projections, work breakdown structures, program management and risk management, manpower resources, selection of the appropriate contract type, assessment of market conditions, risk management, and development of standard and unique contract terms and conditions (Garrett & Rendon, 2005a).

## **2. Solicitation Planning**

The SMC organization-wide maturity level for solicitation planning was determined to be structured (Level 3). This result is based on the overall survey-response means of the 10 SMC organizations surveyed leading to the lowest level indicated. In order for the SMC to take steps towards the next higher level of maturity and achieve a rating of integrated, the SMC should focus on the procurement project's end-user customer and make them an integral part of the procurement team. Activities such as preparing the procurement package with the use of standardized forms and protocols, developing the schedule, and creating terms and conditions should be integrated with other core processes that will improve processes with the solicitation planning area. The SMC leadership should include metrics to measure solicitation planning-related decisions to better improve maturity levels. In addition, management will need to understand its role in the solicitation planning process and execute the process well (Garrett & Rendon, 2005a).



The SMC should use the best practices and knowledge of the higher maturity level organizations within the SMC. The organizations that the SMC should leverage are PKJ, PKO, and PKS, as shown in Figure 1. The SMC should incorporate knowledge sharing and a database of best practices and lessons learned in order to improve the solicitation planning maturity level to integrated. The process improvement and training areas that the SMC should include are planning activities such as determining the procurement method (FAR parts 12, 13, 14, and 15), documenting the competition environment (FAR part 6), determining the evaluation strategy (FAR parts 12, 13, 14, and 15), determining the contract type/incentive (FAR part 16), determining terms and conditions, and developing solicitation documents (FAR parts 12, 13, 14, and 15; Garrett & Rendon, 2005a).

### **3. Solicitation**

The SMC organization-wide maturity level for the solicitation process area was determined to be basic (Level 2). This result is based on the overall survey-response means of the 10 SMC organizations surveyed leading to the lowest level indicated. In order for the SMC to take steps towards the next higher level of maturity and achieve a rating of structured, solicitation processes and standards should be fully established, institutionalized, and mandated throughout the SMC. Basic solicitation processes such as advertising procurement opportunities, conducting solicitation, having pre-proposal conferences, and amending solicitation documents as needed should be better integrated. The SMC management must also practice the use efficiency and effectiveness metrics to make solicitation-related decisions. In addition, management will need to understand its role in the solicitation process and execute the process well (Garrett & Rendon, 2005a).

The SMC should use the best practices and knowledge of the higher maturity level organizations within the SMC. The organizations that the SMC should leverage are PKJ, PKL, PKO, and PKS, as shown in Figure 1. The SMC should incorporate knowledge sharing and a database of best practices and lessons learned in order to improve the solicitation maturity level to structured. Process improvement areas and training that the SMC should focus on are advertising procurement activities (FAR part



5), conducting conferences (FAR parts 5, 12, 13, 14, and 15), and amending solicitation documents as required (FAR parts 12, 13, 14, and 15; Garrett & Rendon, 2005a).

#### **4. Source Selection**

The SMC organization-wide maturity level for source selection was determined to be structured (Level 3). The result was based on the overall survey-response means of the 10 SMC organizations surveyed leading to the lowest level indicated. In order for the SMC to take steps towards the next higher level of maturity and achieve a rating of integrated, the SMC should focus on evaluating proposals, applying evaluation criteria, negotiating contract terms, and selecting contractors. In these core areas, the SMC should ensure integration with other organizational core processes such as customer service, financial management, schedule management, performance management, and risk management.

The SMC should use the best practices and knowledge of the higher maturity level organizations within the SMC. The organizations that the SMC should leverage are PKJ, PKL, PKO, and PKP, as shown in Figure 1. The SMC should incorporate knowledge sharing and a database of best practices and lessons learned in order to improve the source selection maturity level to integrated. Process improvement areas and training that the SMC should focus on include source selection activities such as evaluating proposals (FAR parts 12, 13, 14, and 15); applying evaluation criteria (FAR parts 5, 12, 13, 14, and 15); negotiating contract terms (FAR parts 12, 13, 14, and 15); selecting the contractor (FAR parts 12, 13, 14, and 15); and managing protests, disputes, and appeals (FAR part 33; Garrett & Rendon, 2005a).

#### **5. Contract Administration**

The SMC organization-wide maturity level for contract administration was determined to be basic (Level 2). The result was based on the overall survey-response means of the 10 SMC organizations surveyed leading to the lowest level indicated. In order for the SMC to take steps towards the next higher level of maturity and achieve a rating of structured, contract administration processes and standards should be fully established, institutionalized, and mandated throughout the SMC. Formal documentation



must be developed for contract administration processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting decisions, related contract terms and conditions, and contract administration documents (Garrett & Rendon, 2005a).

The SMC should use the best practices and knowledge of the higher maturity level organizations within the SMC. The organization that the SMC should leverage is PKP, as shown in Figure 1. The SMC should incorporate knowledge sharing and a database of best practices and lessons learned in order to improve the contract administration maturity level to structured. Process improvement areas and training that the SMC should focus on include contract administration activities such as monitoring and measuring contractor performance (FAR parts 42 and 46), managing the contract change process (FAR part 43), and managing the contractor payment process (FAR parts 30, 31, and 32; Garrett & Rendon, 2005a).

## **6. Contract Closeout**

The SMC organization-wide maturity level for contract closeout was determined to be basic (Level 2). The result was based on the overall survey-response means of the 10 SMC organizations surveyed leading to the lowest level indicated. In order for the SMC to take steps towards the next higher level of maturity and achieve a rating of structured, contract closeout processes and standards should be fully established, institutionalized, and mandated throughout the SMC. Formal documentation must be developed for contract closeout processes and standards. Senior management must be involved in providing guidance, direction, and even approval of key contracting decisions, related contract terms and conditions, and contract closeout documents (Garrett & Rendon, 2005a).

The SMC should use the best practices and knowledge of the higher maturity level organizations within the SMC. The organization that the SMC should leverage is PKP, as shown in Figure 1. The SMC should incorporate knowledge sharing and a database of best practices and lessons learned in order to improve the contract closeout maturity level to structured. Process improvement areas and training that the SMC should



focus on include contract closeout activities such as verifying contract completion (FAR part 42), verifying contractor compliance (FAR part 42), ensuring contract completion documentation (FAR part 4), and making final payment (FAR part 42; Garrett & Rendon, 2005a).

## **I. RECOMMENDATIONS FOR CONTRACT MANAGEMENT PROCESS IMPROVEMENT AT THE AFLCMC**

### **1. Procurement Planning**

As an organization in its entirety, the AFLCMC's procurement planning maturity was evaluated as structured (Level 3). A structured maturity level demonstrates an organization's ability to mandate established procurement planning management processes throughout the organization (Garrett & Rendon, 2005a, p. 53). Moreover, senior leaders begin to become more involved by providing guidance and decision-making (Garrett & Rendon, 2005a, p. 53). However, at this maturity level, there is no integration of basic contract management processes to other organizational core processes, and the customer is not a critical member of the procurement team (Garrett & Rendon, 2005a, p. 53). In addition, although senior leaders are involved, they have not developed metrics to help facilitate contracting decisions, as they have not fully understood their responsibilities in procurement planning (Garrett & Rendon, 2005a, p. 53).

For the AFLCMC to progress to the next maturity level in procurement planning, integrated (Level 4), it needs to have its customer as a critical member of the procurement team. Next, the AFLCMC needs to integrate procurement planning processes with other organizational core processes, such as schedule management (Garrett & Rendon, 2005a, p. 53). With this integration, it will be important for senior leaders to develop metrics to help facilitate their decisions. These metrics can include the length of time market research takes and the length of time it takes to create a statement of work. Moreover, the AFLCMC should leverage best practices found in organizations with higher levels of maturity in procurement planning such as WKK. By implementing best practices, the AFLCMC can bring less mature organizations to higher maturities quicker, as they will have successful models to imitate. These procurement planning best practices can be



shared over SharePoint or other internal databases to promote easy and rapid implementation. Training at all levels, from senior leaders to contract managers, will also assist in progressing to the next maturity level.

## **2. Solicitation Planning**

The AFLCMC's solicitation planning maturity as an entire organization was assessed as structured (Level 3). Very similar to procurement planning, a structured maturity regarding solicitation planning means that an organization has demonstrated an ability to mandate and implement established solicitation planning management processes in the organization (Garrett & Rendon, 2005a, p. 53). Additionally, senior leaders have become more involved in solicitation planning, requiring the organization to have standard procurement forms and documents that allow them to give better guidance (Garrett & Rendon, 2005a, p. 56). Nevertheless, at this maturity level, senior leaders have not begun to develop or implement metrics to help their solicitation planning processes and have not included their customers as key members of their procurement team (Garrett & Rendon, 2005a, p. 53). In addition, similar to procurement planning, an organization with structured maturity has not begun to integrate solicitation planning into other organizational core processes (Garrett & Rendon, 2005a, p. 53).

To progress to the next maturity level in solicitation planning, integrated (Level 4), the AFLCMC needs to improve in a few areas. First, senior leaders at the AFLCMC should develop and implement metrics to track solicitation-planning statistics. Second, the AFLCMC needs to integrate solicitation-planning processes with other organizational processes and include its customers as key members of the procurement team (Garrett & Rendon, 2005a, p. 53). This integration will help prepare the documents needed for a solicitation that ensure precise and complete responses from potential contractors (Garrett & Rendon, 2005a, p. 56). Lastly, the AFLCMC should exploit best practices from organizations with higher maturity levels in solicitation planning such as WKK. By using these best practices, the AFLCMC can promote its less mature organizations to higher levels of maturity faster. This can be performed as staff-assisted visits or through SharePoint and related electronic databases. By having information and training readily available, the AFLCMC can develop its organizations to the next maturity level.



### **3. Solicitation**

As an enterprise, the AFLCMC's solicitation planning maturity was evaluated as basic (Level 2). Unlike the first two key process areas, a basic maturity means that an organization has only developed some basic contract management processes and that these processes are only required for the most complex or critical contracts (Garrett & Rendon, 2005a, p. 53). Moreover, these processes are not organization wide and are not consistently used (Garrett & Rendon, 2005a, p. 53). At this maturity level, there is not an established solicitation process that has been mandated throughout the organization (Garrett & Rendon, 2005a, p. 53). A formal documentation process is rare, as well as having any procedures to automate documentation (Garrett & Rendon, 2005a, p. 53). In addition, senior leaders are not as involved in providing guidance and decision-making (Garrett & Rendon, 2005a, p. 53).

For the AFLCMC to mature to the next maturity level in solicitation, structured (Level 3), it will need to progress in a few areas. Foremost, the AFLCMC will need to develop and implement standard solicitation processes and mandate them throughout the organization (Garrett & Rendon, 2005a, p. 53). Having established processes will make the process of gaining bids and proposals from contractors more efficient. Moreover, these processes should be formally documented and there should be a movement to begin automating some of them as well (Garrett & Rendon, 2005a, p. 53). Additionally, senior leaders should become more involved in solicitations, especially in decision-making and guidance (Garrett & Rendon, 2005a, p. 53). Similar to the other two key process areas, the AFLCMC should utilize best practices found in more mature organizations that do solicitations such as WKK and PKE. These best practices do not necessarily have to be from organizations that do solicitations, but should be best practices in general. Training at all levels is even more critical than in the previous two areas, as solicitation maturity was assessed as basic. Guides and flowcharts on SharePoint or another electronic means are helpful tools to disseminate information quickly and easily.



#### **4. Source Selection**

Source selection maturity was evaluated at the AFLCMC as structured (Level 3). A structured maturity regarding source selection indicates that an organization does have established source selection procedures and that these procedures are mandated and implemented organization wide (Garrett & Rendon, 2005a, p. 53). Moreover, a structured maturity demonstrates that senior leaders are involved and allow the tailoring of standardized processes to unique aspects for each contract (Garrett & Rendon, 2005a, p. 53). Established procedures yield effective source selections as proposals are evaluated consistently to organizational standards. Nonetheless, senior leaders rarely implement metrics to assist their source selection decisions. Integrating the customer as a key member of the procurement team is also lacking, as is the integration of source selection procedures to other organizational core processes to include systems engineering and cost control (Garrett & Rendon, 2005a, p. 53).

Developing to the next maturity level in source selection, integrated (Level 4), will require the AFLCMC to improve in a few areas. To start, senior leaders at the AFLCMC should either develop or increase their usage of metrics to track their source selection statistics. These metrics can be a useful tool for senior leaders to provide guidance and aid in their decision-making. Integrating the customer is another area for improvement. By integrating the customer in the source selection phase, proposals can be better evaluated to the customer's wishes. Next, the AFLCMC should integrate its source selection procedures with other organizational processes (Garrett & Rendon, 2005a, p. 53). That way, the source selection team can make the best decision with all parties involved. Another way to develop to the next maturity level is to use best practices found in other organizations that do source selections such as WKK and PKE. By not repeating preventable mistakes, an organization can mature at a faster rate. These best practices should be circulated throughout the organization as either face-to-face interactions or virtually. The key is that the information is distributed and that personnel have ways to question and learn from this training.



## **5. Contract Administration**

As a complete organization, the AFLCMC's contract administration was assessed as structured (Level 3). An organization with a maturity of structured in contract administration has shown an ability to implement and mandate an established contract administration process (Garrett & Rendon, 2005a, p. 53). This established process helps senior leaders to provide decisions and guidance (Garrett & Rendon, 2005a, p. 56). However, at the structured maturity level, senior leaders have not developed or used metrics to aid their contract administration processes. Integrating the customer with the procurement team is also lacking at this maturity level. Moreover, there is not an integration of contract administration to other organizational core processes, such as financial management (Garrett & Rendon, 2005a, p. 53).

In regards to contract administration, for the AFLCMC to mature to the next maturity level, integrated (Level 4), it will need to improve in a few areas. First, it should develop or utilize metrics regarding contract administration. Metrics detailing the number of changes being made and the number of visits to monitor the contractor are all helpful statistics for senior leaders to use to help make decisions. Second, the contract administration team should integrate the customer more. This is because the customer is the main beneficiary of a well-administered contract. Next, the AFLCMC should integrate contract administration with other organizational processes. For example, integrating with financial management will ease payment issues to the contractor if they occur. Lastly, in regards to contract administration, the AFLCMC should apply best practices found in other organizations with higher maturity such as WKK. Instead of making preventable mistakes, the AFLCMC can bypass potential pitfalls and reach a higher maturity by modeling a more mature organization. Akin to the other key process areas, these best practices can be dispersed by traveling road shows and/or electronically. The important part is that the information is out there for personnel to get to and start implementing. This coincides with the importance of training throughout the organization. Continually training personnel will also foster excellent contract administration and aid in progressing to the next level of maturity.



## **6. Contract Closeout**

As an entire organization, the AFLCMC's contract closeout maturity was evaluated as basic (Level 2). A basic maturity level reflects an organization that has developed some basic contract closeout processes that are only mandated for the most intricate or critical contracts (Garrett & Rendon, 2005a, p. 53). Additionally, an organization with a basic maturity level has demonstrated that there are some official documentation procedures for contract closeout (Garrett & Rendon, 2005a, p. 53). However, at this maturity level, there is not an established contract closeout process that has been mandated throughout the organization (Garrett & Rendon, 2005a, p. 53). This coincides with the lack of a formal documentation process and the lack of automation procedures (Garrett & Rendon, 2005a, p. 53). Furthermore, in regards to contract closeout, there is not as much guidance or decision-making from senior leaders (Garrett & Rendon, 2005a, p. 53).

To advance to the next maturity level in contract closeout, structured (Level 3), the AFLCMC will need to develop a few areas. First off, the AFLCMC needs to introduce an organization-wide contract closeout process that is mandated (Garrett & Rendon, 2005a, p. 53). Although mandated, there should still be room for personnel to tailor to their requirements. These mandated processes should also be formally documented, and more repetitive actions should begin to be automated (Garrett & Rendon, 2005a, p. 53). Another area to develop is the involvement of senior leaders in the contract closeout process. The more involved senior leaders are in contract closeout, the more contract managers will pay attention to it. Similar to all the previous key process areas, it is important for the AFLCMC to leverage best practices found in other organizations such as PKE. These best practices will develop organizations to a more mature level as they provide the framework for success. Again, these best practices can be dispersed by SharePoint or in person. The important part is that the information is dispersed. Combined with training, this approach will enable the organization to advance to the next maturity level.



## **J. SUMMARY**

In this chapter, we reported the results of the CMMAT at the SMC and the AFLCMC–WP. For each organization, we applied the CMMAT to see how the organization was rated on the CMMM. Additionally, we discussed key enablers at each organization. Finally, we provided recommendations for process improvement at both the SMC and the AFLCMC–WP. In the next chapter, we present a summary of this project to include our conclusions and recommendations for further research.



## **V. SUMMARY, CONCLUSION, AND AREAS FOR FURTHER RESEARCH**

### **A. CHAPTER INTRODUCTION**

In this chapter, we summarize the research conducted at the SMC and the AFLCMC–WP. We also present our conclusions and provide our recommendations for further research.

### **B. SUMMARY**

In the first chapter, we established the framework for the research presented. We provided a background illustrating a period of expected budget cutbacks and austerity in the DoD. We also discussed the purpose of this research to show how mature contracting processes can help in this time of “belt-tightening.” Additionally, we articulated the research question that would drive the remainder of this report.

In the second chapter, we provided a literature review of ways leaders can measure performance in their organization. One way to measure performance is through organizational assessments, also reviewed in Chapter II. Furthermore, we reviewed specific types of organizational assessments, namely maturity models. Finally, we reviewed the CMMM in detail as a type of maturity model.

In the third chapter, we provided information on CMMM case study organizations, the SMC and the AFLCMC–WP. Notes were included about the makeup of the Air Force Space Command (AFSPC), Air Force Materiel Command (AFMC), the SMC, the AFLCMC–WP, the SMC Directorate of Contracting, and the AFLCMC–WP Directorate of Contracting. We also discussed the contract process management tools currently in use at each of the organizations.

In the fourth chapter, we discussed the results of the CMMM assessment. We determined the contract management maturity level at each organization to include an overall assessment of the contracting centers. Through this assessment, an overview of best practices and the use of those key enablers were also highlighted.



The purpose of this study was to analyze the SMC at Los Angeles Air Force Base, Los Angeles, CA, and the AFLCMC–WP at Wright–Patterson Air Force Base, Dayton, OH, for contract management process maturity. To do this, we utilized the CMMM to find strengths, weaknesses, and best practices in contract management at the SMC and the AFLCMC–WP. Mature contract management can be a strong mission enabler in that superior cost control and resource efficiency can be achieved. This is especially important since the MILDEPS will likely face significant budget constraints in the coming years.

There are numerous ways to study process maturity, and the CMMM is an effective way to study contract management process maturity. In addition to a review of different maturity models and the CMMM, an overview of the SMC and the AFLCMC–WP was provided.

### C. CONCLUSION

Our research at the SMC and the AFLCMC–WP evaluated contracting management process maturity across each of the departments with buying activities. The primary research question in this study was as follows:

- At what level of maturity are the contracting processes in each contracting department at the SMC and the AFLCMC–WP?

In this study, we analyzed process maturity to answer the following two secondary research questions:

- What contract management process tools are utilized at the SMC and the AFLCMC–WP?
- How can contracting process management at the SMC and the AFLCMC–WP be improved, if needed?

#### 1. At what level of maturity are the contracting processes in each contracting department at the SMC and the AFLCMC?

The results of the CMMAT indicate that contracting processes at the SMC are at the following maturity levels:

- Procurement Planning—Basic



- Solicitation Planning—Structured
- Solicitation—Basic
- Source Selection—Structured
- Administration—Basic
- Closeout—Basic

The results of the CMMAT indicate that contracting processes at the AFLCMC-WP are at the following maturity levels:

- Procurement Planning—Structured
- Solicitation Planning—Structured
- Solicitation—Basic
- Source Selection—Structured
- Administration—Structured
- Closeout—Basic

## **2. What contract management process tools are utilized at the SMC and the AFLCMC-WP?**

The SMC had several strong contract process tools that could help increase contract process maturity. The SMC maintains a Buyer's Homepage with links to forms, templates, and guidance. The SMC also has a "Processes by Elimination" tool that interactively guides contract professionals through the steps necessary in a given action. The PK Metrics Dashboard also gives leadership insight into the entire SMC workload and additional granularity into actions grouped by office, type, dollars, or a variety of other characteristics. The AFLCMC-WP also has contract process tools. One division maintains detailed process guides and is attempting to capture all repetitive contracting processes into flow charts. The AFLCMC staff is involved with the greater AFLCMC in authoring contracting-specific chapters for the AFLCMC Process Guide. Although both the SMC and the AFLCMC-WP had process tools, neither had tools linked to specific goals or metrics nor showed evidence of using tools to measure performance.



**3. How can contracting process management at the SMC and the AFLCMC–WP be improved, if needed?**

For each of the organizations studied, we made recommendations for improvements. Most notably, the organizations could document repetitive processes in each of the contracting phases in order to help their buying offices move to the next level of maturity. Additionally, leveraging the best practices of their higher rated divisions across all organizations would help achieve higher levels of maturity overall.

**D. AREAS FOR FURTHER RESEARCH**

The CMMM can be applied to other Air Force contracting organizations: for example, an Air Logistics Center or operational contracting squadrons. The CMMM could also be applied to other DoD contracting organizations: for example, organizations in the U.S. Army and Navy.

Additionally, the SMC and the AFLCMC–WP could be studied again in five years to see if contract management maturity is improving. If the SMC and the AFLCMC–WP are able to institutionalize process maturity improvements, they may be able to recognize gains across all metrics of acquisition success. Additionally, our application of the CMMAT to the SMC and the AFLCMC–WP can be compared to the greater body of research using the CMMM in order to better understand contract management maturity across the entire Department of Defense.



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